Online ISSN: 2249-4618
Print ISSN: 0975-5888

Global Journal of Medical Research: I

Surgeries and Cardiovascular System

Effectiveness of Subtenon's Anesthesia versus Peribulbar

Developmental Anomalies

Highlights

Anesthesia in Cataract Surgeries

Discovering Thoughts, Inventing Future

VOLUME 14 ISSUE 5 VERSION 1.0

© 2001-2014 by Global Journal of Medical Research , USA

Volume 14 Issue 47 was originally issued as I5

Global Journal of Medical Research: I
Surgeries and Cardiovascular System

Volume 14 Issue 47
Originally issued as I5

Global Journal of Medical Research: I
Surgeries and Cardiovascular System

Volume 14 Issue 5 (Ver. 1.0)

Open Association of Research Society

© Global Journal of Medical Research . 2014.

All rights reserved.

This is a special issue published in version 1.0 of "Global Journal of Medical Research." By Global Journals Inc.

All articles are open access articles distributed under "Global Journal of Medical Research"

Reading License, which permits restricted use. Entire contents are copyright by of "Global Journal of Medical Research" unless otherwise noted on specific articles.

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without written permission.

The opinions and statements made in this book are those of the authors concerned. Ultraculture has not verified and neither confirms nor denies any of the foregoing and no warranty or fitness is implied.

Engage with the contents herein at your own risk.

The use of this journal, and the terms and conditions for our providing information, is governed by our Disclaimer, Terms and Conditions and Privacy Policy given on our website http://globaljournals.us/terms-and-condition/menu-id-1463/

By referring / using / reading / any type of association / referencing this journal, this signifies and you acknowledge that you have read them and that you accept and will be bound by the terms thereof.

All information, journals, this journal, activities undertaken, materials, services and our website, terms and conditions, privacy policy, and this journal is subject to change anytime without any prior notice.

Incorporation No.: 0423089
License No.: 42125/022010/1186
Registration No.: 430374
Import-Export Code: 1109007027
Employer Identification Number (EIN):
USA Tax ID: 98-0673427

Global Journals Inc.

*(A Delaware USA Incorporation with "Good Standing"; **Reg. Number: 0423089**)*

Sponsors: Open Association of Research Society
Open Scientific Standards

Publisher's Headquarters office

Global Journals Headquarters
301st Edgewater Place Suite, 100 Edgewater Dr.-Pl,
Wakefield MASSACHUSETTS, Pin: 01880,
United States of America
USA Toll Free: +001-888-839-7392
USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

Global Journals Incorporated
2nd, Lansdowne, Lansdowne Rd., Croydon-Surrey,
Pin: CR9 2ER, United Kingdom

Packaging & Continental Dispatching

Global Journals
E-3130 Sudama Nagar, Near Gopur Square,
Indore, M.P., Pin:452009, India

Find a correspondence nodal officer near you

To find nodal officer of your country, please email us at *local@globaljournals.org*

eContacts

Press Inquiries: *press@globaljournals.org*
Investor Inquiries: *investors@globaljournals.org*
Technical Support: *technology@globaljournals.org*
Media & Releases: *media@globaljournals.org*

Pricing (Including by Air Parcel Charges):

For Authors:
22 USD (B/W) & 50 USD (Color)
Yearly Subscription (Personal & Institutional):
200 USD (B/W) & 250 USD (Color)

Integrated Editorial Board
(Computer Science, Engineering, Medical, Management, Natural Science, Social Science)

John A. Hamilton,"Drew" Jr.,
Ph.D., Professor, Management
Computer Science and Software Engineering
Director, Information Assurance Laboratory
Auburn University

Dr. Henry Hexmoor
IEEE senior member since 2004
Ph.D. Computer Science, University at Buffalo
Department of Computer Science
Southern Illinois University at Carbondale

Dr. Osman Balci, Professor
Department of Computer Science
Virginia Tech, Virginia University
Ph.D.and M.S.Syracuse University, Syracuse, New York
M.S. and B.S. Bogazici University, Istanbul, Turkey

Yogita Bajpai
M.Sc. (Computer Science), FICCT
U.S.A.Email:
yogita@computerresearch.org

Dr. T. David A. Forbes
Associate Professor and Range Nutritionist
Ph.D. Edinburgh University - Animal Nutrition
M.S. Aberdeen University - Animal Nutrition
B.A. University of Dublin- Zoology

Dr. Wenying Feng
Professor, Department of Computing & Information Systems
Department of Mathematics
Trent University, Peterborough,
ON Canada K9J 7B8

Dr. Thomas Wischgoll
Computer Science and Engineering,
Wright State University, Dayton, Ohio
B.S., M.S., Ph.D.
(University of Kaiserslautern)

Dr. Abdurrahman Arslanyilmaz
Computer Science & Information Systems Department
Youngstown State University
Ph.D., Texas A&M University
University of Missouri, Columbia
Gazi University, Turkey

Dr. Xiaohong He
Professor of International Business
University of Quinnipiac
BS, Jilin Institute of Technology; MA, MS, PhD,. (University of Texas-Dallas)

Burcin Becerik-Gerber
University of Southern California
Ph.D. in Civil Engineering
DDes from Harvard University
M.S. from University of California, Berkeley & Istanbul University

Dr. Bart Lambrecht
Director of Research in Accounting and FinanceProfessor of Finance
Lancaster University Management School
BA (Antwerp); MPhil, MA, PhD (Cambridge)

Dr. Carlos García Pont
Associate Professor of Marketing
IESE Business School, University of Navarra
Doctor of Philosophy (Management), Massachusetts Institute of Technology (MIT)
Master in Business Administration, IESE, University of Navarra
Degree in Industrial Engineering, Universitat Politècnica de Catalunya

Dr. Fotini Labropulu
Mathematics - Luther College
University of ReginaPh.D., M.Sc. in Mathematics
B.A. (Honors) in Mathematics
University of Windso

Dr. Lynn Lim
Reader in Business and Marketing
Roehampton University, London
BCom, PGDip, MBA (Distinction), PhD, FHEA

Dr. Mihaly Mezei
ASSOCIATE PROFESSOR
Department of Structural and Chemical Biology, Mount Sinai School of Medical Center
Ph.D., Etvs Lornd University
Postdoctoral Training,
New York University

Dr. Söhnke M. Bartram
Department of Accounting and FinanceLancaster University Management SchoolPh.D. (WHU Koblenz)
MBA/BBA (University of Saarbrücken)

Dr. Miguel Angel Ariño
Professor of Decision Sciences
IESE Business School
Barcelona, Spain (Universidad de Navarra)
CEIBS (China Europe International Business School).
Beijing, Shanghai and Shenzhen
Ph.D. in Mathematics
University of Barcelona
BA in Mathematics (Licenciatura)
University of Barcelona

Philip G. Moscoso
Technology and Operations Management
IESE Business School, University of Navarra
Ph.D in Industrial Engineering and Management, ETH Zurich
M.Sc. in Chemical Engineering, ETH Zurich

Dr. Sanjay Dixit, M.D.
Director, EP Laboratories, Philadelphia VA Medical Center
Cardiovascular Medicine - Cardiac Arrhythmia
Univ of Penn School of Medicine

Dr. Han-Xiang Deng
MD., Ph.D
Associate Professor and Research
Department Division of Neuromuscular Medicine
Davee Department of Neurology and Clinical NeuroscienceNorthwestern University
Feinberg School of Medicine

Dr. Pina C. Sanelli
Associate Professor of Public Health
Weill Cornell Medical College
Associate Attending Radiologist
NewYork-Presbyterian Hospital
MRI, MRA, CT, and CTA
Neuroradiology and Diagnostic Radiology
M.D., State University of New York at Buffalo,School of Medicine and Biomedical Sciences

Dr. Roberto Sanchez
Associate Professor
Department of Structural and Chemical Biology
Mount Sinai School of Medicine
Ph.D., The Rockefeller University

Dr. Wen-Yih Sun
Professor of Earth and Atmospheric SciencesPurdue University Director
National Center for Typhoon and Flooding Research, Taiwan
University Chair Professor
Department of Atmospheric Sciences, National Central University, Chung-Li, TaiwanUniversity Chair Professor
Institute of Environmental Engineering, National Chiao Tung University, Hsin-chu, Taiwan.Ph.D., MS The University of Chicago, Geophysical Sciences
BS National Taiwan University, Atmospheric Sciences
Associate Professor of Radiology

Dr. Michael R. Rudnick
M.D., FACP
Associate Professor of Medicine
Chief, Renal Electrolyte and Hypertension Division (PMC)
Penn Medicine, University of Pennsylvania
Presbyterian Medical Center, Philadelphia
Nephrology and Internal Medicine
Certified by the American Board of Internal Medicine

Dr. Bassey Benjamin Esu
B.Sc. Marketing; MBA Marketing; Ph.D Marketing
Lecturer, Department of Marketing, University of Calabar
Tourism Consultant, Cross River State Tourism Development Department
Co-ordinator , Sustainable Tourism Initiative, Calabar, Nigeria

Dr. Aziz M. Barbar, Ph.D.
IEEE Senior Member
Chairperson, Department of Computer Science
AUST - American University of Science & Technology
Alfred Naccash Avenue – Ashrafieh

President Editor (HON.)

Dr. George Perry, (Neuroscientist)
Dean and Professor, College of Sciences
Denham Harman Research Award (American Aging Association)
ISI Highly Cited Researcher, Iberoamerican Molecular Biology Organization
AAAS Fellow, Correspondent Member of Spanish Royal Academy of Sciences
University of Texas at San Antonio
Postdoctoral Fellow (Department of Cell Biology)
Baylor College of Medicine
Houston, Texas, United States

Chief Author (HON.)

Dr. R.K. Dixit
M.Sc., Ph.D., FICCT
Chief Author, India
Email: authorind@computerresearch.org

Dean & Editor-in-Chief (HON.)

Vivek Dubey(HON.)
MS (Industrial Engineering),
MS (Mechanical Engineering)
University of Wisconsin, FICCT
Editor-in-Chief, USA
editorusa@computerresearch.org

Sangita Dixit
M.Sc., FICCT
Dean & Chancellor (Asia Pacific)
deanind@computerresearch.org

Suyash Dixit
(B.E., Computer Science Engineering), FICCTT
President, Web Administration and
Development , CEO at IOSRD
COO at GAOR & OSS

Er. Suyog Dixit
(M. Tech), BE (HONS. in CSE), FICCT
SAP Certified Consultant
CEO at IOSRD, GAOR & OSS
Technical Dean, Global Journals Inc. (US)
Website: www.suyogdixit.com
Email:suyog@suyogdixit.com

Pritesh Rajvaidya
(MS) Computer Science Department
California State University
BE (Computer Science), FICCT
Technical Dean, USA
Email: pritesh@computerresearch.org

Luis Galárraga
J!Research Project Leader
Saarbrücken, Germany

Contents of the Issue

i. Copyright Notice
ii. Editorial Board Members
iii. Chief Author and Dean
iv. Contents of the Issue

1. Triple Vessel Coronary Artery Disease in Young Female. *1-4*
2. Spontaneous Rupture of Multiple Renal Cysts with Massive Retroperitoneal Hematoma. *5-11*
3. A Comparison Study of Complication Rates – To PICC or to CVC? *13-17*
4. Developmental Anomalies of Temporal Muscle Superficial Temporal Muscle. *19-21*
5. Comparison of Laparoscopic and Open High Ligation Procedure for Varicocele. *23-26*
6. Gallbladder Volvulus: A Case Report and Review. *27-29*
7. Preliminary Seton Before Fistulectomy: A Single Institute Experience in Treating Fistula in Ano; 1 Year Follow up Results. *31-35*

v. Fellows and Auxiliary Memberships
vi. Process of Submission of Research Paper
vii. Preferred Author Guidelines
Viii. Index

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Triple Vessel Coronary Artery Disease in Young Female

By Ali Razaghani & Hafeez-Ul-Hassanvirk
Thomas Jefferson University, United States

Background- Although coronary heart disease (CHD) primarily occurs in patients over the age of 40, younger men and women can be involved. Majority of studies have used an age cut-off of 40 to 45 years to define "young" patients with CHD or acute myocardial infarction (MI). The same age definition will be used in this article. The prevalence of CHD in younger subjects is difficult to establish accurately since it is frequently a silent process. Acute Myocardial infarction in young females is an uncommon occurrence and even if we see cases, very few of them have shown to have greater than one vessel coronary artery disease. When a young female present with acute MI, the presentation is very vague and can be easily missed so, presence or absence of cardiovascular risk factors regardless of age should be the key factor in making a decision to perform coronary angiography and full cardiovascular workup. We report here 31 year old female with multiple cardiovascular risk factors who presented with an atypical chest pain with normal EKG in emergency room and was ultimately diagnosed with triple vessel coronary artery disease. In this paper we will describe a case to describe the importance of early coronary angiography and cardiovascular workup in presence of significant risk factors despite atypical presentation and younger age of patient.

GJMR-I Classification: *NLMC Code: WG 595*

Strictly as per the compliance and regulations of:

© 2014. Ali Razaghani & Hafeez-Ul-Hassanvirk. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Triple Vessel Coronary Artery Disease in Young Female

Ali Razaghani [α] & Hafeez-Ul-Hassanvirk [σ]

I. Background

Although coronary heart disease (CHD) primarily occurs in patients over the age of 40, younger men and women can be involved. Majority of studies have used an age cut-off of 40 to 45 years to define "young" patients with CHD or acute myocardial infarction (MI). The same age definition will be used in this article.

The prevalence of CHD in younger subjects is difficult to establish accurately since it is frequently a silent process.

Acute Myocardial infarction in young females is an uncommon occurrence and even if we see cases, very few of them have shown to have greater than one vessel coronary artery disease. When a young female present with acute MI, the presentation is very vague and can be easily missed so, presence or absence of cardiovascular risk factors regardless of age should be the key factor in making a decision to perform coronary angiography and full cardiovascular workup. We report here 31 year old female with multiple cardiovascular risk factors who presented with an atypical chest pain with normal EKG in emergency room and was ultimately diagnosed with triple vessel coronary artery disease. In this paper we will describe a case to describe the importance of early coronary angiography and cardiovascular workup in presence of significant risk factors despite atypical presentation and younger age of patient.

Conclusion:

II. Case Report

a) Presenting Complaint

31 Y O F p/w chest pain for 2 weeks.

b) History of Present Illness

31 year old Female with PMH of HTN, DM 2(on insulin), HLD, glaucoma, Major depression, Asthma was in her usual state of health 2 week ago when she started having chest pain. It was mid sternal, 10/10, intermittent, sharp/stabbing, and increased by lying down, improved by sitting associated with nausea but no vomiting. She woke up multiple times at night due to this pain. She preferred to sleep in front of fan due to dyspnea at night. She also had shortness of breath for couple of months on exertion. She has been recently using two pillows for sleep. She used to walk 4 blocks before getting short of breath (for years) but recently her exercise tolerance has decreased to half a block. She denies any palpitations, any previous history of such pain. Due to this pain, she went to the PMD who called 911 and sent her to ED.

Author α σ: 39 Brandon road upper Darby, PA 19082. United States. e-mails: alighani152@gmail.com, hafeezvirkmd@gmail.com

III. ED Course

By EMS, she received Aspirin 162mg po once. She received tylenol 650mg po once in ED.

ED VS: afebrile; HR 105/min; BP 146/81mmHg; RR 20/min; O2S 99% RA.

She is not compliant with the medications at home. She has a HHA 5days a week from 8am to 1pm. She has recently gained >20lbs in last year,

Past Medical History: Admitted in hospital multiple times for DKA.

Allergy: NKDA.

Hospitalization: multiple times for DKA.

GI: Not significant.

Family History: hypertension in sister, no diabetes in family.

Social History: HHA, quit smoking 2 years ago, nonalco- holic, no illicit drugs.

Gyne-Obsteterics: menses regula, not pregnant.

Allergies:

Home Medications: Lantus insulin q12h, Humalog with meals, Zyrtec 10mg daily, Simvastatin 20mg daily, Tricor 160mg daily, Cozaar 25mg daily, Vitamin D, Os-Ca.

Vitals: O2 Saturation: 98, Pulse Rate: 73*, Respirations: 17*, BP Position: Lying*, Systolic BP: 124*, Diastolic BP: 72*, Pain Level: 0*, POC Blood Glucose: 109, Temperature (F): 99.3*,, Body Mass Index: 37.55.

Physical E

General Exam: She was lying in bed, comfortably, fully oriented.

Head Exam: NC/AT.

Eye Exam: PEERLA, EOMI intact.

Neck Exam: supple, no JVD.

Respiratory Exam: CTA BL, no wheeze.

Cardiac Exam: S1 S2 heard, regular, tachycardiac.

Gastrointestinal Exam: ND/NT, BS+

© 2014 Global Journals Inc. (US)

Extremities Exam: palpable pulses, no cyanosis, minimal edema.

Neurological Exam: AAOx3

IV. Results

Initial Labs:

Normal

Cardiac Enzymes:

Troponin I : 2.6-->2.7-->2.8

CK-MB: 4.4→3.2→3.0

Cholesterol, Total	287 MG/DL
Cholesterol, HDL	48 MG/DL
Cholesterol, LDL (Calculated)	SEE TEXT
Cholesterol/HDL Ratio	6.0
Triglycerides	611 MG/DL

Diagnostic studies: TTE

Left Ventricle: The left ventricular cavity size is normal. Left ventricular wall motion is normal. Visually estimated left ventricular ejection fraction is 60%.

Right Ventricle: Normal right ventricular size and function.

Left Atrium: Normal left atrial size.

Right Atrium: Normal right atrial size.

Mitral Valve: The Doppler (color and spectral) study shows trivial mitral regurgitation.

AV and Aortic Root: The Doppler (color and spectral) study shows trivial aortic regurgitation.

Tricuspid Valve: The Doppler (color and spectral) study shows trivial tricuspid regurgitation. As assessed from the tricuspid regurgitant jet, the pulmonary artery systolic pressure is normal.

pulmonic valve: Structurally normal pulmonic valve without stenosis or regurgitation.

Aortic root: Normal aortic root.

V. Conclusions

Visually estimated left ventricular ejection fraction is 60%.

-Echo showed 60% EF

-Catheterization was done and showed 3V CAD

a) Plan

-start on heparin gtt, stop it 3 hrs before CABG

-start metoprolol 25mg bid po

-CABG tomorrow

-NPO after midnight

-stop aspirin/plavix for CABG

Endocrinology:

#DM 2

-IDDM for 20 yrs

-on insulin lantus 60U BID, 30U TID

plan:

-c/w insulin

#Asthma: well controlled last attack this winter family history+

There are also limited data on the frequency of MI in younger subjects. In the Framingham Heart Study, the incidence of an MI over a 10-year follow-up was12.9/1000 in men 30 to 34 years old and 5.2/1000 in women 35 to 44 years old [2]. The incidence of MI was eight to nine times greater in men and women aged 55 to 64 years. In other studies, 4 to 10 percent of patients with MI were ≤40 or 45 years of age [3-5]. In two series of patients with CHD at ≤40 years of age, women comprised 5.6 and 11.4 percent of patients [3,6].

Although CHD is an uncommon entity in young patients, it constitutes an important problem for the patient and the treating physician because of the devastating effect of this disease on the more active lifestyle of young patients. In addition, these patients have different risk factor profiles, clinical presentations, and prognoses than older patients. All of these factors should be taken into consideration when treating young patients with CHD

VI. Coronary Risk Factors

The relative importance of risk factors for the development of CHD according to age was evaluated in a report in which 11,016 men aged 18 to 39 years were followed for 20 years [7]. The relative risks associated with the traditional risk factors were of similar magnitude as in a group of 8955 men aged 40 to 59 years. These included:

- Age — relative risk 1.63 per six year increase
- Serum cholesterol — relative risk 1.92 per 40 mg/dL [1.04 mmol/L] increase
- Systolic blood pressure — relative risk 1.32 per 20 mmHg increase
- Cigarette smoking — relative risk 1.36 per 10 cigarette/day increase

Young patients with MI usually have multiple risk factors for CHD. In some studies, for example, as many as 90 to 97 percent had one or more traditional risk factors for atherosclerosis [8-10]. In a prospective study of over 7000 women of mean age 27 years at baseline followed for an average of 31 years, there were 47 CHD deaths [11]. The CHD mortality rates for those with no risk factors, only one risk factor, or two or more risk factors were 0.7, 2.4, and 5.4 per 1000 person-years, respectively. A comparable relationship was seen for cardiovascular disease mortality and for all-cause mortality. (See "Overview of the risk equivalents and established risk factors for cardiovascular disease".)

a) Smoking

Cigarette smoking is the most common and most modifiable risk factor in young patients. It has been noted in 65 to 92 percent of young patients with MI,

© 2014 Global Journals Inc. (US)

compared to 24 to 56 percent of patients older than 45 years of age [6,9,12-16]. (See "Cardiovascular risk of smoking and benefits of smoking cessation".)

b) Family history

Younger patients with CHD more often have a family history of premature CHD: 41 compared to 28 and 12 percent in middle aged or elderly patients, respectively [9]; and 57 versus 43 percent in two series [12]. A higher incidence of a positive family history in young patients (64 percent) was noted in the largest report of 823 patients [6].

In addition, the offspring of patients with premature CHD are more likely to have coronary risk factors than those without such a family history [17]. These include excess body weight and higher levels of serum cholesterol, glucose, and insulin. These offspring are also more likely to have evidence of vascular disease such as endothelial dysfunction and increased carotid artery intima-media thickness [18].

The association between family history and premature CHD can be due to both genetic and environmental factors. This was addressed in a study of 398 families in which 62 vascular biology genes were evaluated [19]. Missense variants of several thrombospondin genes were significantly associated with MI and CHD.

c) Lipid abnormalities

Hypercholesterolemia is common in young patients with CHD, but its prevalence is similar to that in older patients. However, when compared to older patients, young patients have lower mean serum high density lipoprotein (HDL) concentrations (35 versus 43 mg/dL [0.9 versus 1.1 mmol/L]) and higher serum triglycerides (239 versus 186 mg/dL [2.7 versus 2.1 mmol/L]) [15]. (See "HDL metabolism and approach to the patient with abnormal HDL-cholesterol levels".)

Hypertriglyceridemia was, in one series, the most common lipid abnormality in young patients with MI [20]. It may be associated with glucose intolerance and a predominance of small atherogenic LDL particles, both of which predispose to atherosclerosis. (See "Approach to the patient with hypertriglyceridemia".)

d) Diabetes and hypertension

Two other important coronary risk factors, diabetes mellitus and hypertension, appear to be less common in young patients with CHD than in older patients [6,12]. However, young patients frequently have subtle problems with glucose metabolism. In one study of 108 patients without a history of diabetes mellitus who had an MI before the age of 45, 65 percent had decreased oral glucose tolerance and a hyperinsulinemic response to oral glucose challenge [20]. This finding is consistent with other observations that impaired glucose tolerance in the absence of overt diabetes is a risk factor for coronary disease. (See "Prevalence of and risk factors for coronary heart disease in diabetes mellitus", section on 'CHD before diabetes'.)

e) Obesity

Obesity appears to be an independent risk factor for coronary atherosclerosis, at least in young men. This was illustrated in an autopsy study of approximately 3000 persons between the ages of 15 and 34 who died from noncardiac causes [21]. Increasing body mass index was associated with both fatty streaks and raised atherosclerotic lesions in the right coronary and left anterior descending coronary arteries in young men, but not young women. The effect of obesity on other risk factors (eg, lipid abnormalities, hypertension, glucose intolerance) accounted for only about 15 percent of the relationship between obesity and coronary atherosclerosis.

How this might occur is not known, but other studies have noted an apparently independent effect of obesity as an important coronary risk factor. A report from the Framingham Heart Study suggested that obesity in middle-aged subjects could account for as much as 23 percent of cases of CHD in men and 15 percent in women

f) Other factors

A variety of other possible contributing factors have been identified in young patients with MI. These include:

- Oral contraceptive use in young women, primarily when combined with heavy smoking [25]. (See "Risks and side effects associated with estrogen-progestin contraceptives".)
- Frequent cocaine use, which, in the Third National Health and Nutrition Examination Survey of 10,085 adults between the ages of 18 and 45, accounted for 25 percent of nonfatal MIs [26]. (See "Evaluation and management of the cardiovascular complications of cocaine abuse", section on 'Myocardial infarction'.)
- Smoking marijuana may be a rare trigger of MI [27]. (See "Cannabis use disorder: Treatment, prognosis, and long-term medical effects".)
- Factor V Leiden, which is inactivated less efficiently by activated protein C than wild-type factor V, leads to a procoagulant state by increasing thrombin generation. In a report of 107 patients with premature MI but no significant coronary artery stenosis (average age 44), the prevalence of carriers for factor V Leiden was significantly higher in these patients compared to 244 with an MI and significant stenoses and 400 healthy controls (12 versus 4.5 and 5 percent) [28]. At least in young women, the increase in risk with factor V Leiden may be confined to smokers

© 2014 Global Journals Inc. (US)

[29]. (See "Factor V Leiden and activated protein C resistance: Clinical manifestations and diagnosis".)

- Psychosocial factors, such as anger, may be important in the development of premature CHD [30]. (See "Psychosocial factors in coronary and cerebral vascular disease".)
- In women, acute MI may be

g) Angiographic Findings

In the majority of patients younger than 45 years of age, angiographic studies were performed because of a history of MI. As expected, major differences were found when compared to older patients.

h) Coronary disease severity

Younger patients have a higher incidence of normal coronary arteries, mild luminal irregularities, and single vessel coronary artery disease than do older patients [10,12,13,15,38].

One of the largest reports of angiographic findings in young patients with CHD comes from a substudy of the CASS trial, which compared the results of coronary angiography in 504 young men (≤35 years of age) and women (≤45 years of age) with a history of an MI to those in over 8300 older patients [12]. The following significant differences were noted:

- Normal coronary arteries were more common in the young patients (18 versus 3 percent). Young women had a higher frequency of angiographically normal coronary arteries than young men, despite a 10 year age difference in the definition of "young."
- Single vessel coronary disease was more common (38 versus 24 percent) and three vessel disease was less common (14 versus 39 percent) in the younger patients.
- Although some series have shown a predilection for involvement of the left anterior descending artery in young patients [13,38], this was not found in the CASS substudy.

In another large series of 823 young patients with CHD, single vessel disease was present in 55 to 60 percent [6].

- Symptomatic coronary heart disease (CHD) is uncommon in young men and women (age less than 40 to 45 years). (See 'Introduction' above.)
- Younger patients with CHD more often have a family history of premature CHD. (See 'Family history' above.)
- Cigarette smoking is the most common and most modifiable risk factor in young patients. (See 'Smoking' above.)
- Diabetes mellitus and hypertension appear to be less common in young patients with CHD than in older patients. (See 'Diabetes and hypertension' above.)
- Other risk factors such as cocaine use, factor V Leiden, and oral contraceptive use are more common in younger individuals with CHD. (See 'Other factors'above.)
- The clinical presentation of CHD in younger patients is different from that in older patients. A higher proportion of young patients do not experience angina, and, in the majority of cases, an acute coronary syndrome that progresses rapidly to MI if left untreated is the first manifestation of CHD. (See 'Clinical presentation' above.)
- Younger patients have a higher incidence of normal coronary arteries, mild luminal irregularities, and single vessel coronary artery disease than do older patients. Rarer causes of CHD such as spontaneous coronary dissection or Kawasaki disease occur more commonly in the young. (See 'Angiographic findings' above.)
- In general, the management of CHD in the young is similar to that in older individuals.

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Spontaneous Rupture of Multiple Renal Cysts with Massive Retroperitoneal Hematoma

By Salah A.M. Abdel hadi, Abbas A.R. Mohamed, Osama Shareefi & Khaled M.A. Hussin

Abstract- Spontaneous rupture of the kidney is a disruption of the renal parenchyma or the collecting system without significant trauma. It may lead to the formation of subcapsular or retroperitoneal hematomas. We present a case of spontaneous rupture of left kidney, with massive retroperito-neal hematoma caused by multiple simple renal cysts.

Keywords: kidney, renal cysts, spontaneous rupture, retroperitoneal hematoma.

GJMR-I Classification: NLMC Code: WG 625.R3

Strictly as per the compliance and regulations of:

© 2014. Salah A.M. Abdel hadi, Abbas A.R. Mohamed, Osama Shareefi & Khaled M.A. Hussin. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Spontaneous Rupture of Multiple Renal Cysts with Massive Retroperitoneal Hematoma

Salah A.M. Abdel hadi [α], Abbas A.R. Mohamed [σ], Osama Shareefi [ρ] & Khaled M.A. Hussin [ω]

Abstract- **Spontaneous rupture of the kidney is a disruption of the renal parenchyma or the collecting system without significant trauma. It may lead to the formation of subcapsular or retroperitoneal hematomas. We present a case of spontaneous rupture of left kidney, with massive retroperitoneal hematoma caused by multiple simple renal cysts.**

Keywords: kidney, renal cysts, spontaneous rupture, retroperitoneal hematoma.

I. Introduction

Spontaneous retroperitoneal hemorrhage is an uncommon entity. It is even rarer when the underlying cause is associated with renal disease (1). Spontaneous rupture of the kidney affects either the collecting system or parenchyma and, in most cases, the non-traumatic rupture is associated with underlying diseases of the kidney (2). We report a case of spontaneous rupture of left kidney with massive retroperitoneal hematoma secondary to multiple simple renal cysts presented with hemorrhagic shock in a patient on anticoagulation therapy.

II. Case Report

An 85-year-old man was presented to our emergency department because of left flank pain and an increasing mass in his left flank of one day duration. He is known hypertensive and diabetic on medical treatment. His urological history was normal and he did not have a history of trauma. Two months earlier to his presentation he had confirmed deep vein thrombosis of the left femoral and popliteal veins and he was put on enoxaparin 60 mg subcutaneously twice daily. On examination he was conscious but drowsy. Pulse was 110/minute; blood pressure was 100/40 mm of Hg. Abdominal examination showed a palpable mass and tenderness over the left flank. There was no hematuria on urine analysis. Hemoglobin was 8.4 gram%, WBCC $20x10^{9,}$ urea 18.6mmol/L and creatinine 289 mmol/L. coagulation studies were normal.

After initial fluid resuscitation he had a non-contrasted CT scan which showed Left perinephric and retro peritoneal slightly dense (about 60 HU) fluid collection which measure about 19 x 4 cm extending down to the left upper pelvic region, together with a hypodense cyst(measures about 6 x 6.7 cm) in the upper pole of the right kidney. The left psoas muscle is slightly larger in size than the right one and it is bordering the left retroperitoneal fluid collection (figure 1-2).

Author α: Consultant urologist, Department of Surgical Specialties, NGH–Madinah –KSA. e-mail: salahabdelhadi@yahoo.co.uk

Author σ: Consultant General and Laparoscopic Surgeon, Department of Surgical Specialties, NGH–Madinah –KSA.
e-mail: abbas_ar@hotmail.com

Author ρ: Consultant Plastic Surgeon, Head of the department of Surgical Specialties, NGH–Madinah –KSA.

Author ω: Assistant Consultant General Surgery, Department of Surgical Specialties, NGH–Madinah –KSA.

© 2014 Global Journals Inc. (US)

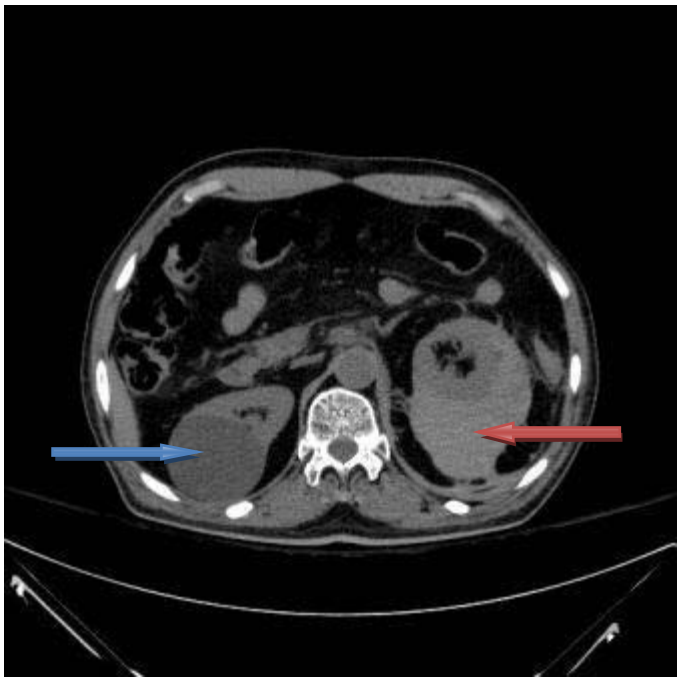


Figure 1 : plain CT scan showing the left perinepheric hematoma (red arrow) and the right renal cyst (blue arrow)

Figure 2 : Retroperitoneal extension of the perinepheric hematoma along the anterior aspect of the left psoas muscle to the pelvis

The patient was admitted to the ICU and continued to be resuscitated with blood and fresh frozen plasma. Inspite of 3 units of blood transfusion he dropped his hemoglobin to 5.4 gram% together with obvious increase in the left flank mass size. A decision was taken to go ahead with CT angiography with a possibility of percutaneous embolization of the renal artery. The CT angiogram showed a significant increase in the amount of the left renal, perirenal and retroperitoneal hematoma with evidence of contrast extravasations from renal cortex at different sites in the arterial and provenous phases denoting active bleeding associated with poor left renal excretion. The retroperitoneal hematoma is extending caudally to the left lower pelvis along the anterior aspect of the left psoas muscle together with mild free intraperitoneal fluid. Multiple small renal simple parenchymal cysts and double left renal arteries were noted. There was 7 x 6 cm right renal simple cyst (figure 3-5).

© 2014 Global Journals Inc. (US)

Figure 3 : Contrast enhanced CT scan (arterial phase) showing the haematoma with minimal free fluid at both paracolic gutters(green arrows)

Figure 4 : CT scan with IV contrast, coronal view (Porto venous phase) showing the extravasation of the contrast (the arrow) indicating active bleeding

© 2014 Global Journals Inc. (US)

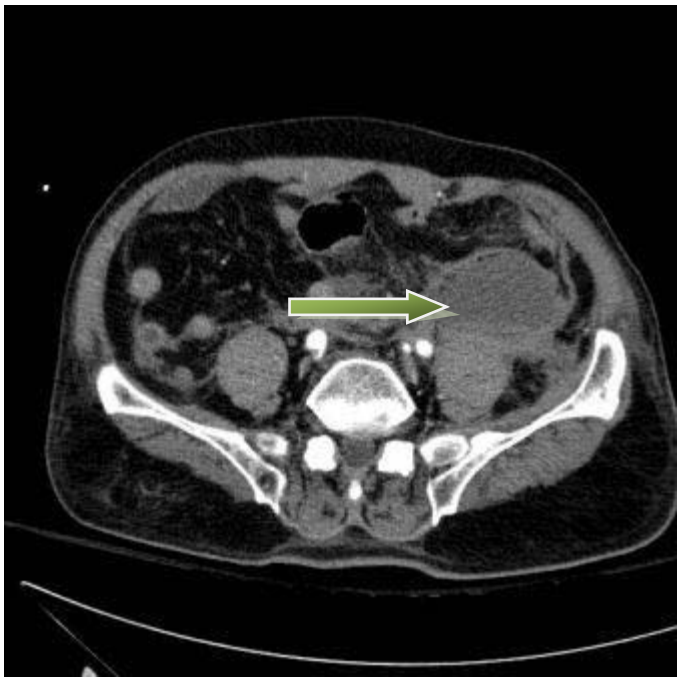


Figure 5 : lower cuts of the contrast enhanced CT scan showing the extension of the retroperitoneal haematoma into the lower pelvis (the green arrow)

In view of continuous dropping of the hemoglobin, expansion of the retroperitoneal hematoma and the CT evidence of active bleeding the patient were taken for emergency exploration through trans-peritoneal approach. Intra operatively there was extensive retroperitoneal hematoma extending from sub splenic region down to the pelvis and a huge cortical rupture on the posteriolateral aspect of the left kidney together with multiple ruptured and intact renal cysts (photo 1-3). The left ureter was of normal caliber and there was no evidence of backwards pressure on the renal pelvis. Left nephrectoy was done together with evacuation of the retroperitoneal hematoma and drainage of the retroperitoneal space. Postoperatively the patient had percutaneous insertion of inferior vena cava filters to prevent pulmonary embolism and was commenced on heparin subcutaneously. He remained haemodynamically stable and he didn't require further blood transfusion. The histopathology of the kidney revealed focal glommerulosclerosis with focal interstitial inflammation and ruptured multiple simple cortical cysts. There was no evidence of malignancy.

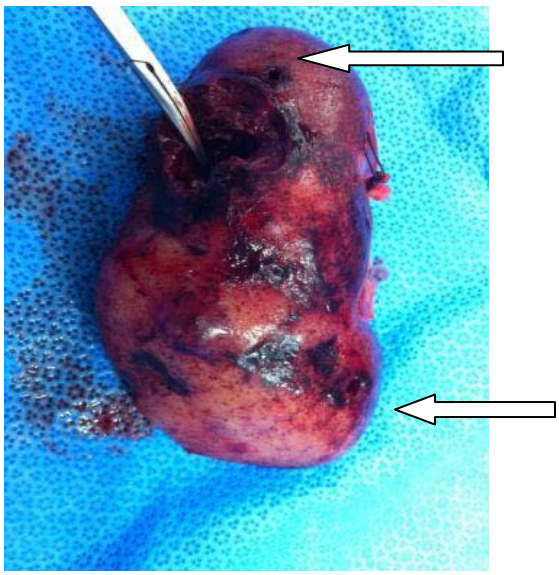


Photo 1 : Showing a ruptured large cyst (the artery forceps) and multiple small cysts (the arrows) in the posteriomedial aspect of the kidney

© 2014 Global Journals Inc. (US)

Photo 2 : the artery forceps pointing to an intact cyst

Photo 3 : the longitudinally opened kidney showing the ruptured cysts

III. Discussion

Definition of Wunderlich syndrome, also known as spontaneous retroperitoneal hemorrhage, was first given in 1700 by Bonet and was more completely explained by Wunderlich in 1856 (3). Etiologies as well as the precise mechanisms leading to Spontaneous nontraumatic massive retroperitoneal hemorrhage are unclear in most of the reported cases (4). It is usually secondary to a renal neoplasm, with angiomyolipoma being the most frequent followed by renal cell carcinoma (5) occurring in 57–73% of cases (6).

It also seen in association with patients with anticoagulation therapy, bleeding abnormalities, and hemodialysis (7) and may represent one of the most serious and potentially lethal complications of anticoagulation therapy. The incidence of retroperitoneal hematoma has been reported at 0.6-6.6% of patients

© 2014 Global Journals Inc. (US)

undergoing therapeutic anticoagulation (8, 9, and 10). Warfarin, unfractionated and low-molecular weight heparin have all been implicated (11).

Non-traumatic retroperitoneal hemorrhage due to a spontaneous kidney rupture is a known, but uncommon, entity (1).

Dougal et al examined 78 individual cases of renal rupture. He reported that renal tumor rupture was the cause in 58% of cases, vessel diseases in18% and infections in 10% of all cases of retroperitoneal bleeding (2).

In renal tumors the incidence is high in angiomyolipoma, occurring in 13-100% of the cases, depending on tumor size, while in renal cell carcinoma, it occurs in only 0.3-1.4% of cases (12).

Simple renal cysts are frequent, particularly in the elderly. Fifty per cent of individuals over 50 years of age have single or multiple cysts (13). Simple cysts are discrete lesions within the kidney that are typically cortical, extending outside the parenchyma and distorting the renal contour (14). They can be unilateral or bilateral, single or multiple. They are usually asymptoms. Their complications include obstruction, infection, rupture or hemorrhage, confined either to the cyst or causing subcapsular or peri-renal hemorrhage (1).

Many cases of kidney ruptures were reported in the literature in association with polycystic kidney disease (15-16), however although renal cysts are commonly seen, spontaneous hemorrhage into a cyst causing a massive retroperitoneal hematoma and circulatory compromise is an extremely rare event (17).

Blakeley CJ, et al report a case of a 45 year old woman presented with hemorrhagic shock secondary to Spontaneous retroperitoneal hemorrhage complicating rupture simple renal cyst(17).

The cause of cyst rupture with hemorrhage is unclear, as it is not known whether expansion with increased intracystic pressure occurs, with the subsequent tearing of blood vessels, or whether hemorrhage into the cyst is the first event, with subsequent rupture from cyst expansion (1, 18).

Although we don't know the exact mechanism of the kidney rupture in our case but we assume that rapid and spontaneous bleeding occurred into the cysts, followed by the cysts rupture, and eventually by retroperitoneal bleeding. We also believe that the prolong use of the enoxaparin contributed significantly to both triggering of the bleeding and the extent of the retroperitoneal hematoma.

Spontaneous rupture of the kidney usually present with classical 'Lenk's triad', consisting of acute flank pain, tenderness and symptoms of internal bleeding (19).

CT angiography is the gold standard investigation in patient suspected to have spontaneous kidney rupture. In addition to confirming the rupture it provides very crucial information that whether the bleeding is continuing or stopped.

Nephrectomy is the treatment of choice in patients with kidney rupture with severe perirenal hematoma and severe retroperitoneal bleeding (20, 2). The midline transabdominal approach is preferable as it allows safer vascular control before exploring the ruptured kidney, and should be considered in patients with signs of a large blood loss from heavy retroperitoneal bleeding.

Some authors advocate nephrectomy even if the renal angiogram failed to demonstrate the cause of the hemorrhage due to the possibility of a small clinically unapparent renal cell carcinoma (21, 22, and 23). In contrast, some others have advised a conservative approach when diagnostic studies fail to demonstrate a significant pathology (24). Renal arteriography with embolization is anther therapeutic option to control the bleeding in haemodynamically stable patients when renal tumors can be excluded (25).

IV. Summary

Non-traumatic retroperitoneal hemorrhage due to a spontaneous kidney rupture is a known, but uncommon. It is even rarer when the underlying cause is associated with renal disease. Spontaneous nontraumatic massive retroperitoneal hemorrhage (Wünderlich's syndrome) is usually secondary to a renal neoplasm, with angiomyolipoma being the most frequent followed by renal cell carcinoma. It is also seen in association with patients with anticoagulation therapy, bleeding abnormalities, and hemodialysis. Spontaneous rupture of the kidney usually present with classical 'Lenk's triad', consisting of acute flank pain, tenderness and symptoms of internal bleeding. CT scan almost always confirms the diagnosis and point out to the cause. Nephrectomy is the treatment of choice in patients with kidney rupture with severe perirenal hematoma and severe retroperitoneal bleeding.

Reference Références Referencias

1. Wolff JM, Jung PK, Adam G, Jakse G. Spontaneous retroperitoneal aemorrhage associated with renal disease.J R Coll Surg Edinb. 1998 Feb; 43(1):53-6.
2. McDougal SW, Kursh ED, Persky L. Spontaneous rupture of the kidney with pen-renal haematoma. J Urol 1975; 114:181—4.
3. Polkey HJ, Vynalek WJ. Spontaneous nontraumatic perirenal and renal hematomas. Arch Surg. 1933; 26:196.
4. Daliakopoulos SI. Spontaneous retroperitoneal hematoma: a rare devastating clinical entity of a pleiada of less common origins. J Surg Tech Case Rep. 2011 Jan; 3(1):8-9.
5. Peña JA, Serrano M, Cosentino M, Rosales A, Algaba F, Palou J, Villavicencio H. Laparoscopic

© 2014 Global Journals Inc. (US)

management of spontaneous retroperitoneal hemorrhage. Urol Int. 2011; 87(1):114-6.
6. Morgentaler A, Belville JS, Tumeh SS, Richie JP, Loughlin KR. Rational approach to evaluation and management of spontaneous perirenal hemorrhage. SurgGynecolObstet.1990; 170:121–5.
7. Bhasin HK, Dana CL. Spontaneous retroperitoneal hemorrhage in chronically hemodialyzed patients. Nephron1978; 22: 322-7.
8. Estivill Palleja X, Domingo P, Fontcuberta J, Felez J. Spontaneous retroperitoneal hemorrhage during oral anticoagulant therapy. Arch Intern Med 1985; 145: 1531-4.
9. Mant MJ, O'Brien BD, Thong KL et al. Haemorrhagic complications of heparin therapy. Lancet 1977; 1: 1133-5.
10. Forfar JC. A 7-year analysis of haemorrhage in patients on long-term anticoagulant treatment. Br Heart J 1979; 42: 128-32.
11. Ernits M, Mohan PS, Fares LG II, Hardy H III. A retroperitoneal bleed induced by enoxaparin therapy. Am Surg 2005; 71: 430-3.
12. Chang S, Ma C, Lee S. Spontaneous retroperitoneal hemorrhage from kidney causes. EurUrol1988; 15:281-4.
13. Nahm AM, Ritz E. The simple renal cyst. Nephrol Dial Transplant 2000; 15: 1702–1704.
14. Eknoyan G. A clinical view of simple and complex renal cysts. J Am Soc Nephrol 2009; 20: 1874–1876.
15. Zahir M, Al Muttairi H, Upadhyay SP, Mallick PN. Rupture in polycystic kidney disease presented as generalized peritonitis with severe sepsis: a rare case report. Case Rep Urol. 2013; 2013: 927676.
16. Hammami M, Guirat A, Ksibi H, Azzaza M, Rekik N, Beyrouti MI. Intraperitoneal rupture of renal cyst in autosomal dominant polycystic kidney disease. N Am J Med Sci. 2010 May; 2 (5):238-40.
17. Blakeley CJ, Thiagalingham N. Spontaneous retroperitoneal haemorrhage from a renal cyst: an unusual cause of haemorrhagic shock. Emerg Med J 2003; 20: 388.
18. Davis JM, McLaughlin AP. Spontaneous renal haemorrhage due to cyst rupture: CT findings. AJR 1987; 148: 763—4.
19. Pedersen J, Emamian S, Nielsen M. Simple renal cyst: Relations to age and arterial blood pressure. Br J Radiol 1993; 66: 581–584.
20. Swift DL, Lingeman JE, Baum WC. Spontaneous retropentonealhaemorrhage: a diagnostic challenge. J Urol1980; 123: 577—82.
21. Bagley D H, Feldman R A, Glazier W, Trauig A, Krauss P. Spontaneous retroperitonealhaemorrhage from renal carcinoma. JAMA 1982; 248(6): 720-1.
22. Kendall A R, Senay B A, Coll M E. Spontaneous subcapsular renal haematoma: diagnosis and management. J Urol 1988; 139: 246-50.
23. Novicki D E, Turlington J T, Ball T P. The evaluation and management of spontaneous perirenal haemorrhage. J Urol 1980; 123(5): 764-5.
24. Howalt J S, Squires J W. Spontaneous rupture of the kidney: A case of a traumatic retroperitoneal bleeding. Am J Surg 1972; 123(4): 484-8.
25. Albi G, del Campo L, Tagarro D. Wünderlich's syndrome: causes, diagnosis and radiological management. Clin Radiol. 2002 Sep; 57(9):840-5.

© 2014 Global Journals Inc. (US)

This page is intentionally left blank

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

A Comparison Study of Complication Rates – To PICC or to CVC?

By Hilman Tjiang, Krishanth Naidu, Bella Nguyen & David Hardman

The Canberra Hospital, Australia

Abstract- *Background:* Cost-effective, safe and dependable central venous access is fundamental in the care of anpatients. This study sets out to compare the complication rates between electively insertedperipheral (PICCs) and central venous cathethers (CVCs) in operating theatres.

Methods: A retrospective clinical audit was undertaken. Complications included in this study are: malposition events, thrombotic/thrombophlebitis, infectio n and dysfunction.

Results: A total of 189 patients met the inclusion cr iteria. Malpositioning of the catheter tips and thrombotic/thrombophlebitic events more often occurred after PICCs insertion than CVCs. There was no statistical difference in the catheter associated infection and dysfunctio n rate for PICCs and CVCs. The highest number of complications occured in the first 7 indwelling days.

Conclusion: This study highlights that the potential advantages of reduced expected cost- and labour- effectiveness of PICCs as traditionally perceived, may be inaccurate, and further awareness of complications associated with PICCs need to be considered.

Keywords: *central venous access, complications, PICC, CVC, thrombophlebitis.*

GJMR-I Classification: *NLMC Code: WI 480*

Strictly as per the compliance and regulations of:

© 2014. Hilman Tjiang, Krishanth Naidu, Bella Nguyen & David Hardman. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

A Comparison Study of Complication Rates – To PICC or to CVC?

Hilman Tjiang [α], Krishanth Naidu [σ] Bella Nguyen [ρ] & David Hardman [ω]

Abstract- ***Background:*** **Cost-effective, safe and dependable central venous access is fundamental in the care of anpatients. This study sets out to compare the complication rates between electively insertedperipheral (PICCs) and central venous cathethers (CVCs) in operating theatres.**

Methods: **A retrospective clinical audit was undertaken. Complications included in this study are: malposition events, thrombotic/thrombophlebitis, infection and dysfunction.**

Results: **A total of 189 patients met the inclusion criteria. Malpositioning of the catheter tips and thrombotic/thrombophlebitic events more often occurred after PICCs insertion than CVCs. There was no statistical difference in the catheter associated infection and dysfunction rate for PICCs and CVCs. The highest number of complications occured in the first 7 indwelling days.**

Conclusion: **This study highlights that the potential advantages of reduced expected cost- and labour- effectiveness of PICCs as traditionally perceived, may be inaccurate, and further awareness of complications associated with PICCs need to be considered.**

Keywords: central venous access, complications, PICC, CVC, thrombophlebitis.

I. Introduction

Obtaining central venous access that is cost effective, safe and dependable is an important consideration in the management of acutely ill patients. This access is important to provide prolonged administration of intravenous medication, access for chemotherapy, parenteral nutrition, haemodialysis, and resuscitation in intensive care settings.[1]

Central venous access can be achieved using two main groups of catheters, namely central venous catheters (CVCs) and peripherally inserted central catheters (PICCs). Due to the elimination of the associated risks of haemorrhage and pneumothorax with CVC insertion, and given that PICCs can be inserted at the bedside by medical and nurse-based teams, PICCs have been the favoured central catheter type. They are seen to be more cost-effective and labour efficient.

Author α: (Basic Physician Trainee) MBBS, BMed Sci, Department of Vascular Surgery, The Canberra Hospital.
e-mail: hilman.tjiang@act.gov.au
Author σ: (General Surgery Registrar) BMed, Department of GENERAL Surgery The Canberra Hospital Yamba Drive, Garran Australian Capital Territory, 2605 Australia. e-mail: krish2e2@hotmail.com
Author ρ: (Basic Physician Trainee) MBBS, BBio Tech Department of Vascular Surgery, The Canberra Hospital.
e-mail: bella.nguyen@act.gov.au
Author ω: (Consultant Vascular Surgeon), Department of Vascular Surgery, The Canberra Hospital. e-mail: david.hardman@act.gov.au

In the past few years, there have been several studies and reviews, which have challenged whether PICCs improve overall quality of patient care. These studies argue that with increased complications such as malpositions, infections and thrombotic events associated with PICCs, they may not be as cost and labour effective as previously perceived. A recent meta-analysis has found malpositioning events (9.3% vs 3.4%); thrombophlebitis rates (78 vs 7.5 per 10 000 indwelling days); catheter dysfunction (78 vs 14 per 10,000 indwelling days) occurred more often in PICCs than CVCs respectively.[2] The usage of PICCs in replacement of CVCs for similar indications are reported to be increasing, and awareness that PICCs may have higher complication rate is not widespread.[1]

In light of this emerging evidence, this study sets out to compare the complication rates between PICCs and CVCs electively inserted in operating theatre by the anaesthetics team at The Canberra Hospital within a six months period. The complications looked at in this study include the malposition events, rates of thrombotic/thrombophlebitis, infection and dysfunction.

II. Methods

This study is a retrospective clinical audit of patient data using the medical record database at The Canberra Hospital. All patients, age greater than 16 years old, with central lines (PICCs and CVCs) inserted in the operating theatre by anaesthetists within six months period starting from 01/06/2011 to 31/12/2011 were included in the audit. Only non-tunnelled CVCs are included in this study. Complications included in this study are: malposition events, thrombotic/thrombo-phlebitis, infection and dysfunction.

Post-procedural X-ray showing the tip of the central line not being in the desirable position determines malposition event. The optimal positions of central catheter tips for most indications are recognised to be the distal portion of the Superior Vena Cava (SVC) and high right atrium.

Thrombotic/thrombophlebitis is defined to include transient superficial thrombophlebitis and phlebitis as clinical diagnosis of erythema and tenderness around the catheter exit site and thrombi, which form in the deep venous system, whichare demonstrated radiologically.

Infection is defined to include local skin infection as clinical diagnosis of erythematous, oozing

© 2014 Global Journals Inc. (US)

skin, with/without purulent discharge at site of exit of catheter; and Catheter-Related Bloodstream Infection (CRBSI). CRBSI is defined as "the clinical manifestation of bacteremia occurring in the absence of an apparent source of infection other than the catheter, proven when the same pathogen is isolated from the involved catheter and from blood cultures".[2] Dysfunction is defined as lumens being blocked for either receiving or drawing (i.e. events within the device).

The rates of complications are expressed in per 10,000 indwelling catheter days, which is calculated as the number of complication (events) over total indwelling days of the catheter multiplied by 10,000 days. Data collected was processed and analysed with Microsoft Excel 2012© for Windows. Statistics calculation was performed using MedCalc ©.

III. Results

A total of 189 patients met the inclusion criteria with age ranging from 16 to 95 years old (mean age 60 years old). Gender breakdown for both central line types are roughly equal in number. One hundred and four PICCs (74.8%) were placed for prolonged antibiotic therapy and 15 (10.79%) to administer TPN. Twenty PICCs (14.39%) were inserted for other reasons, most commonly for patients with difficult IV access requiring blood sampling, or to administer insulin or heparin infusion. Twenty-seven CVCs (54%) were placed for haemodialysis access, 10 (20%) were inserted for IV antibiotics, 9 (18%) were inserted for TPN, 1 (2%) inserted for chemotherapy and 3 (6%) were inserted for IV access and resuscitation. PICCs have a mean indwelling time of 18 days and total of 2486 indwelling days. CVCs have a mean indwelling time of 9 days, with a total of 427 total indwelling days.

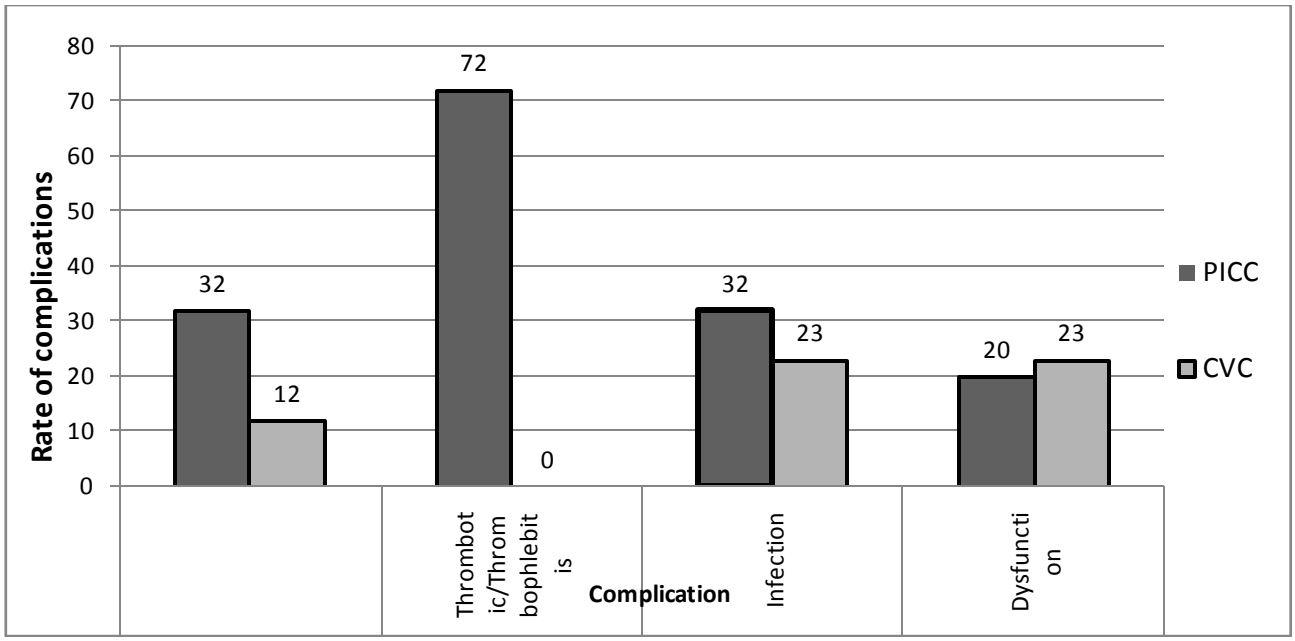
The complication rates of CVCs and PICCs in the study are summarised in Table 1 below. The most common complication in PICCs is thrombotic/thrombophlebitis events with 18 (72/10,000 indwelling days), whilst the most common complication in CVCs is malpositioning events (6 events; 12%).

Table 1 : Summary of complication rates in PICCs and CVCs inserted in 189 patients in operating theatre at The Canberra Hospital (between 1st June 2011 and 31st December 2011). * OR is estimated using the null hypothesis where there is 0 variable and regular OR unable to be calculated

Type of central catheter	Number of cases (%) n = 189	Total indwelling days	Malposition events (%)	Events (rate per 10,000 indwelling days)		
				Thrombotic/ Thrombophlebitis	Infection	Dysfunction
PICC	*139 (74%)*	*2486*	*45 (32%)*	*18 (72)*	*8 (32)*	*5 (20)*
CVC	*50 (26%)*	*427*	*6 (12%)*	*0 (0)*	*1 (23)*	*1 (23)*
Odds ratio (95% CI)			*3.63 (1.44 – 9.14)*	*4.46 (1.49 – 13.37)**	*2.99 (0.36 – 24.55)*	*1.83 (0.21 – 16.04)*

Malpositioning of the catheter tips more often occurred after PICCs insertion than CVCs (32% vs 12%; OR 3.51 (95% CI 1.39 – 8.84); P-value 0.006). Similarly, the rates of thrombotic/thrombophlebitis events were higher in PICCs than CVCs (72 vs 0/10,000 indwelling days; estimated OR 4.46 (95% CI 1.49 – 13.37)). There was no statistical difference in the catheter associated infection rates with 32 vs 23/10,000 indwelling days (OR 2.99; 95% CI (0.36 – 24.55); P-value 0.31) for PICCs and CVCs respectively. Similarly, the rate of dysfunction was found to be no difference between the two types of central lines (20 vs 23/10,000 indwelling days (OR 1.83; 95% CI (0.21 – 16.04)) for PICCs and CVCs respectively. These findings are summarised in Graph 1 below.

© 2014 Global Journals Inc. (US)



Graph 1 : Comparison of complications rates between PICCs and CVCs

Nil CVC tips sent to microbiology returned with positive growth for any microbiology, whilst seven PICCs returned with positive microbiology, namely Coagulase negative Staphylococcus (n=3); Micrococcus species (n=1); Streptococcus viridians (n=1) and mixed skin type flora (n=1). Additionally, we observed one possible case of CRBSI in a patient with PICC line inserted.

The data was also analysed to establish the number of catheter indwelling days before complications arise. The highest number of complications in both PICCs and CVCs occurred with total of 22 cases of PICCS and 2 cases of CVCs occurred during the first 7 indwelling days.

PICCs inserted for IV antibiotics have the highest rate of complications, with 11 thrombotic/thrombophlebitis events (44/10,000 indwelling days) followed by 8 infections (32/10,000 indwelling days) and 5 dysfunctions (20/10,000 indwelling days). PICCs inserted for TPN have the next highest rate of complications with 4 thrombotic/thrombophlebitis events (16/10,000 indwelling days), 3 infections (12/10,000 indwelling days) and 0 dysfunctions.

IV. Discussion

The findings of this study are compared with other studies performed elsewhere during the period 1966 – 2011 as described in literature review.[2] This study's complication rate of malposition is statistically significantly higher in PICCs than in CVCs (32% Vs 12%), and is consistent with the finding of other studies (Table 2). The malposition rate of 32% of this study is noted to be significantly higher than in other studies.[3,4]This study also showed that PICCs have higher rates of thrombotic/thrombophlebitis complications than CVCs, in contrast to four other studies which showed that CVCs have higher infection rates than PICCs.

Table 2 : Comparison of data collected in other studies with this study

Catheter type (number of events)	Total indwelling day	Malposition (%)	Complications rate (rate per 10,000 indweling days)			Study
			Thrombotic/ Thrombophlebitis	Infection	Dysfunction	
PICC (135) CVC (135)	1381 1056	4 3	22 0	0 19	36 0	(3)
PICC (51) CVC (51)	482 533	10 2	166 19	41 56	166 38	(4)
PICC (209) CVC (285)	2209 3597	10 2	113 33	9 22	131 14	(5)
PICC (472) CVC (713)	2313 4421	NA* NA*	246 41	9 0	151 149	(6)

© 2014 Global Journals Inc. (US)

PICC (75) CVC (31)	1815 583	NA* NA*	77 34	66 103	NA* NA*	(7)
PICC (139) CVC (50)	2486 247	*32%* *12%*	*72* *0*	*32* *23*	*36* *23*	This study

**NA: Data not reported*

It was discussed in a recent review, that lower infection rates in PICCs found in studies may have been due to comparison of rates between stable in-patient and/or outpatient in PICC cohorts, with unstable, acutely ill ICU patients in CVC cohorts.[8] It has been hypothesised that PICCs may also have lower infection rates due to the catheter insertion site of antecubital fossa, a less ideal environments for bacterial growth compared to the subclavian and jugular vein areas which may be contaminated by nasal and oral flora.[9]

One confounding factor explaining lower thrombotic/thrombophlebitis ratein CVCs in this study may be due to the predominant indication of CVCs is for haemodialysis, which often include the use of prophylactic heparin. PICCs were also found to have a significantly higher rate of malposition events, and it has been theorised that thrombosis could be caused by initial malposition event.[1] It may be useful for future studies to consider whether thromboprophylaxis in PICCs may reduce the complication rate.

Traditional ICU literature recommends approximately 1 week of indwelling time for CVCs, whilst there is a big range of recommended time of stay for PICCs in the literature. It is often assumed that for indications with longer indwelling time; PICCs would be the preferred choice to CVCs.[9] Our study shows that most complication arise within 7 days of catheter insertion, for both PICCs and CVCs. A review has also shown that 30-40% of PICC have to be removed before completion of therapy.[1]These findings suggest that PICCs may not necessarily have a lower rate of complications for indications, which require longer indwelling time.

There are limitations of this study that must be taken into consideration. Firstly, this was a retrospective study, the definition of complication cannot be standardised and relied solely on recorded documentations. Additionally, the study has limited sample size, particularly in CVCs with short indwelling days, and multiple zero for data collected in complication rates, making statistical analysis difficult.

There are multiple confounding factors identified in this study including patients' co-morbidities and immune status; and differences in indications between CVCs and PICCs mean that CVCs already have a biased of shorter indwelling time and therefore less possibility of having complications developing. The study also did not differentiate the complication differences in tunnelled versus non-tunnelled, jugular or subclavian inserted CVCs, which are widely reported in literature to have difference in complications rates.

V. Conclusion

Our study found that PICCs line has higher rate of complications, especially malposition events and thrombotic/thrombophlebitis, in comparison to CVCs. Serious complication, such as CRBSI, might also arise with insertion of PICC line. This study highlights that the potential advantages of reduced expected cost- and labour-effectiveness of PICCs as traditionally perceived, may be inaccurate, and further awareness of complications associated with PICCs need to be considered. Clinicians should carefully take into account patient factors such as immune status, co-morbidities, and gender prior to deciding which central venous access to use.

VI. Acknowledgements

The authors have no information to disclose in relation to the use of any writing assistance.

VII. Conflict of Interest

The authors have no financial and personal relationships with other people or organizations that could inappropriately influence (bias) this submission.

VIII. Funding Source

The authors have no extra or intra-institutional funding to declare.

IX. Appendix

Table 1: Summary of complication rates in PICCs and CVCs inserted in 189 patients in operating theatre at The Canberra Hospital (between 1st June 2011 and 31st December 2011). * OR is estimated using the null hypothesis where there is 0 variable and regular OR unable to be calculated.

Graph 1: Comparison of complications rates between PICCs and CVCs.

Table 2: Comparison of data collected in other studies with this study.

Reference Références Referencias

1. Turcotte S, Dube S, Beauchamp G. Peripherally inserted central venous catheters are not superior to central venous catheters in the acute care of surgical patients on the ward. World journal of surgery. 2006 Aug;30(8):1605-19. PubMed PMID: 16865322. Epub 2006/07/26. eng.
2. Pikwer A, Akeson J, Lindgren S. Complications associated with peripheral or central routes for

© 2014 Global Journals Inc. (US)

central venous cannulation. Anaesthesia. 2012 Jan;67(1):65-71. PubMed PMID: 21972789. Epub 2011/10/07. eng.

3. Alhimyary A, Fernandez C, Picard M, Tierno K, Pignatone N, Chan HS, et al. Safety and efficacy of total parenteral nutrition delivered via a peripherally inserted central venous catheter. Nutrition in clinical practice : official publication of the American Society for Parenteral and Enteral Nutrition. 1996 Oct;11(5):199-203. PubMed PMID: 9016135. Epub 1996/10/01. eng.
4. Cowl CT, Weinstock JV, Al-Jurf A, Ephgrave K, Murray JA, Dillon K. Complications and cost associated with parenteral nutrition delivered to hospitalized patients through either subclavian or peripherally-inserted central catheters. Clinical nutrition (Edinburgh, Scotland). 2000 Aug;19(4):237-43. PubMed PMID: 10952794. Epub 2000/08/23. eng.
5. Duerksen DR, Papineau N, Siemens J, Yaffe C. Peripherally inserted central catheters for parenteral nutrition: a comparison with centrally inserted catheters. JPEN Journal of parenteral and enteral nutrition. 1999 Mar-Apr;23(2):85-9. PubMed PMID: 10081998. Epub 1999/03/19. eng.
6. Giuffrida DJ, Bryan-Brown CW, Lumb PD, Kwun KB, Rhoades HM. Central vs peripheral venous catheters in critically ill patients. Chest. 1986 Dec;90(6):806-9. PubMed PMID: 3780327. Epub 1986/12/01. eng.
7. Worth LJ, Seymour JF, Slavin MA. Infective and thrombotic complications of central venous catheters in patients with hematological malignancy: prospective evaluation of nontunneled devices. Supportive care in cancer : official journal of the Multinational Association of Supportive Care in Cancer. 2009 Jul;17(7):811-8. PubMed PMID: 19096883. Epub 2008/12/20. eng.
8. Amerasekera SS, Jones CM, Patel R, Cleasby MJ. Imaging of the complications of peripherally inserted central venous catheters. Clinical radiology. 2009 Aug;64(8):832-40. PubMed PMID: 19589422. Epub 2009/07/11. eng.
9. McGee DC, Gould MK. Preventing complications of central venous catheterization. The New England journal of medicine. 2003 Mar 20;348(12):1123-33. PubMed PMID: 12646670. Epub 2003/03/21. eng.

© 2014 Global Journals Inc. (US)

This page is intentionally left blank

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Developmental Anomalies of Temporal Muscle Superficial Temporal Muscle

By Guerrissi Jorge Orlando & Cotroneo Gustavo
Hospital Argerich, Argentina

Abstract- The anatomy of the temporal region is complex. Also there is controversy over the structures that make up the region.

Thus than classically described anatomical structures as fascias, temporal muscle, frontal nerve, arteries, the superficial temporal muscle is present in a variable number of cases.

This muscle represents fibrous regression of named superficial temporal muscle very developed in animals with a specific masticatory action. In human has no physiological importance but its knowledge is important for plastic and maxillofacial surgeons to undertake surgeries in the region since it can generate confusion over anatomical planes and their relationship to vessels and nerves.

GJMR-I Classification: *NLMC Code: QZ 340*

Strictly as per the compliance and regulations of:

© 2014. Guerrissi Jorge Orlando & Cotroneo Gustavo. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Developmental Anomalies of Temporal Muscle Superficial Temporal Muscle

Guerrissi Jorge Orlando[α] & Cotroneo Gustavo[σ]

Abstract- The anatomy of the temporal region is complex. Also there is controversy over the structures that make up the region.

Thus than classically described anatomical structures as fascias, temporal muscle, frontal nerve, arteries, the superficial temporal muscle is present in a variable number of cases.

This muscle represents fibrous regression of named superficial temporal muscle very developed in animals with a specific masticatory action. In human has no physiological importance but its knowledge is important for plastic and maxillofacial surgeons to undertake surgeries in the region since it can generate confusion over anatomical planes and their relationship to vessels and nerves.

I. Introduction

The temporal region has anatomical structure of subcutaneous fascias that confuses not only the constitution of the region but also during plastic and reconstructive surgical maneuvers. Identify different fascias and its connections with numerous nerve and artery branches that cross the region is especially important for plastic surgeons.

The first fascial layer of the region is called temporoparietal fascia and it is located below the hair follicles and subcutaneous tissue of the temporoparietal region. It is considered a cephalic extension of the superfical musculoaponeurotic system described by Mitz V and Peyronie M (1974) and continues in all directions with other structures of this system (1).

Anteriorly, it is continuous with the frontalis and orbicularis oculi muscle, whereas posteriorly, it blends with the occipitalis and posterior auricular muscles. Superiorly, the fascia merges with the galea aponeurotica and inferiorly it is continuous with the superficial musculoaponeurotic system. (2) (3)

Traditionally, it has been described as a single sheet, although other authors such as Knize DM (4) and Tellioğlu AT (5) mention that this would comprise two sheets. Histological studies showed the presence of a thin muscular sheet in the outer sheet of the temporoparietal fascia below the temporal line.

This muscle corresponds to the superficial temporal muscle present in some animals but that it has been transform rudimentary in humans and only remains superficially covering the temporal region.

These muscle fibers lack functionality and constitute only anatomical finding.

A loose areolar tissue plane lies deep to the temporoparietal fascia and extends beneath the entire superficial fascia system of the scalp, including the galea aponeurotica and the frontalis and occipitalis muscle.

Deeper is the temporal fascia, which surrounds the temporal muscle. Underneath the muscle, this fascia merges with the periosteum of the temporal, frontal and parietal bone. Superiorly, the temporal fascia inserts in the superior temporal line and inferiorly it inserts in the zigmatic arch. (6). FIGURE 1.

There is no doubt that the most important anatomic element in the region is the frontal branch of the facial nerve.

The facial nerve runs almost horizontally to the parotid 2cm below the zygomatic arch, heading obliquely from back to front, from inside to outside and from top to bottom. As it leads to the periphery of the parotid gland, it becomes more superficial. Inside of the parotid gland, the division of the primary branches occurs: an upper, the temporo-facial and lower the cervical facial. (7)

When the temporo-facial branch reaches the level of the mandibular condyle, it is divided into several secondary trunks, which usually anastomose forming true plexuses. The branches that arise from the temporo-facial trunk are: 1. Frontal; 2. Temporal; 3. Eyelid branches; 4. Zigomatics and 5. Upper mouth.

Regarding the temporal region above the zygomatic arch, the frontal branch is located in the existing plane between the temporoparietal fascia and the superficial layer of the temporal fascia.

In the Cases Where the Superficial Temporal Muscle is Present, There are no Changes in the Ordinary Relationships of the Facial Nerve and Vassels Since this Rudimentary Muscle Stays in a More Superficial Plane Just Below Hair Folicules.

This paper has following objective to clarify anatomical knowledge of the temporoparietal region, principally when fibers of temporal superficial muscle are presents avoiding erroneous surgical maneuvers and potentially dangerous for both regional nerves and vessels.

Author α σ: Hospital Argerich, Argentina. e-mail: cotro_@hotmail.com

© 2014 Global Journals Inc. (US)

II. Material and Method

It is difficult to establish the true incidence rate of this muscle abnormality, but In 58 surgeries performed in the temporal region in the Plastic and Reconstructive Department of Cosme Argerich Hospital in Buenos Aires was evident the presence of superficial muscle fibers confirmed by direct visualization and histologic studies in 29 patients. The histological study confirmed striated skeletal muscle with hematoxilin and eosin staining. FIGURE 2 AND 3.

Twenty patients (69%) were operated of aging face by mean of superficial and submuscular lifting and other 9 (31%) underwent maxillofacial surgeries in TMJ, superior maxilla and zigomatic arch.

During undermining of temporal area, atrophic muscular fibers were found immediately below subcutaneous fat layer into temporoparietal fascia. In all cases (29 patients) muscle fibers were very thin, forming isolated groups extended on temporal area.

III. Superficial Temporal Muscle and Comparative Anatomy

Oxnard CE al. (2008) in their research note 400 human corpses, 35 of which possessed the superficial temporal muscle. These bodies possessing the superficial temporal muscle were dissected. Furthermore dissected 4 chimpanzes, 4 rhesus monkeys, colobus monkeys and other species. (8)

In monkeys and apes, the arrangement of the dissected temporal muscles at work is consistent with primate anatomy texts. A superficial fleshy head of the temporalis muscle takes origin from the skull area between the superior and inferior temporal ridges, from the ridges themselves and to a slight degree from the outer surface of the underlying deep head. Further a few aditional fibres taking origin from the internal surface of the zygomatic arch. This superficial muscle is covered by deep fascia which arises from the superior temporal ridge of the skull and passes downwards on the surface of the superficial fibres of the muscle to the coronoid process of the mandible.

The main (deep) part of the temporal muscle is below the superficial temporal muscle and arises from the periosteum covering a large part of the lateral surface of the skull below the inferior temporal ridge. This muscle gives way to a glistening silver tendon which also inserts on the coronoid process of the mandible. This muscle is covered by deep fascia which arises, as does the deep fascia lining the undersurface of the superficial head, from the inferior temporal ridge. The fact, however, that these two layers are separate implies that, at least on occasion, these two muscles are capable of contracting independently, even thought they might often act together.

In humans, the temporalis muscle is different. It arises from the cranium at and below the inferior temporal line (a thin line in humans, rather a strong ridge as in apes and most large monkeys). It is characterised by a glistening silver tendon just like that of the deep head in apes and monkeys. Underlying the human temporalis muscle is a deeper layer of deep fascia entirely similar to the deepest layer under the deep head in apes and monkeys.

Oxnard CE in his research dissected 35 cadavers in each of which a complete or partial superficial head of the temporalis muscle was present. These anomalous muscular heads extends from situations just like in apes and monkeys where the entire muscle was present, though very much thinner, to situations in which lesser portions of the muscle were found.

There were 4 cases (1%) with a superficial head entirely similar, though very much thinner, to that in apes and monkeys. There were 31 cases (8%) in which a partial superficial head was present. This muscle arises from the area comprised between the temporal lines. It has a cranial part thay may have muscle fibers or have mostly aponeurotic component. As in apes and monkeys, this muscle receives muscular fibers from the surface of the deep temporal muscle and the internal face of the zygomatic arch and directed to the coronoid process of mandible. (8) FIGURE 4.

Why the loss of this temporal muscle has occurred in humans? An obvious possibility is that changed masticatory habits and mechanics did not render such reduction or loss deleteious, whereas such changes would be inmediately eliminated in creatures with the diets of most apes and monkeys.

Furthermore, Testut, in his description of the epicranial fascia or aponeurotic galea expressed that morphologically the galea should be considered, as the muscles that attaches, as a portion of the panniculus carnosus, which originally muscular, has experienced during its development a fibrous regression. (9) (10)

IV. Discussion

The temporal region is a complex anatomical area due to its composition of multiple layers and there is a strong semantic and practical controversy over its component structures and the relationships they have with each other.

Understanding the anatomy of the area is important for the plastic and head and neck surgeons, to accurately identify different fascias that span the region and its connections with numerous nerve and artery branches that cross the region. It is essential to know the frontal branch of the temporo-facial branch of the facial nerve that extends obliquely from the zygomatic arch to reach the deepest part of the frontal muscle.

The preservation of axonal integrity is the primary care should have the plastic surgeon in the

© 2014 Global Journals Inc. (US)

dissection of the temporal region for aesthetic or reconstructive surgeries.

The presence of muscle fibers in superficial planes may confuse the surgeon who can work in a wrong plane and also, he can make future surgical maneuvers that may endanger any of the neural structures mentioned.

There is sufficient evidence to show the presence of a thin muscular layer or even isolated muscle fibers in the temporoparietal fascia, below the hair follicles.

This muscle corresponds to the superficial temporal muscle present in animals that has been devolving in humans, but there may be remains superficially covering the temporal region; these muscle fibers lack functionality and are only anatomical finding. FIGURE 5.

Of the different explanatory theories about the persistence of this muscle, have value two: 1) remnant of the superficial temporal muscle and 2) remaining panniculus carnosus

Animals including lower mammals, have muscles that are attached to the skin, these are called skin muscles or panniculus carnosus (11). These muscles allow the animal to mobilize certain areas of the skin, apparently as a protective measure to ward located noxas agents, such as insects. In human limbs have evolved so much that can reach any part of the body. For this reason, the panniculus carnosus became obsolete and has devolved. But remnants of the it can be found in some individuals. Some muscles may contain remnants of the panniculus carnosus as the pectoralis major, trapezius, serratus, pyramidalis, palmaris longus and some craniofacial muscles.

V. Conclusion

It is essential the knowledge of the complex anatomy of the temporal region for the surgeon that undertake any surgery in the region. Fibers of the superficial temporal muscle can be usually finding; though they have no functional or physiological significance but surgical importance.

From another point of view, the presence of this muscle must be known by maxillofacial surgeons when they perform surgeries on the region in case of both superior mandible or TMJ approaches.

For the plastic surgeon also it is important to know the existence of the superficial temporal muscle and that may become apparent during the regional dissection in the treatment of periorbital aging or any other variety of rhytidectomies confusing the surgeon about the exact location of the anatomical planes and their relation to nerve and vascular structures.

Reference Références Referencias

1. Mitz V, Peyronie M (1976) The superficial musculo-aponeurotic system (SMAS) in the parotid and cheek area. *Plast. Reconstruc. Surgery* 58: 80-8.
2. Accioli de Vasconcellos J, Britto JA, Henin D, Vacher C (2003) The fascial planes of the temple and face: an en-block anatomical study and plea for consistency. *Br J Plastic Surgery 56:* 623-29.
3. Krayenbuhl N, Isolan G, Hafez A, Ysargil M (2007). The relationship of the frontotemporal branches of the facial nerve to the fascias of the temporal region: a literature review applied to practical anatomical dissection. *Neurosurgery Rev* 30: 8-15.
4. Tellioglu AT, Tekdemir I, Erdemli EA, Tuccar E, Ulusoy G (2000) Temporoparietal fascia: an anatomic and histologic reinvestigation with new potencial clinical aplication. *Plast Reconstr Surg* 105: 40-45.
5. Knize DM (1996) An anatomically based study of the mechanism of eyebrow ptosis. *Plast Recontrct Surgery* 97: 1321-33.
6. Davidge KM, Van Furth W, Agur A (2010) Naming the soft tissue layers of the temporoparietal region: unifying anatomic terminology across surgical disciplines. *Operative neurosurgery 1 67:* 120-30.
7. Guerrissi Jorge Orlando y col (2007) Cirugía de los tumores de la glándula parótida. Buenos Aires, AMOLCA.
8. Oxnard et al. (*2008)* Ghost of the past I: Some muscles and fasciae in the head domain. *Folia Primatol* 79: 429-40.
9. Testut L, Latarjet A (1951) Tratado de anatomía humana. Salvat. 9th edition.
10. Testut L (1884) Les anomalies musculares chez l'homme. Masson G. Paris.
11. Stevenson R, Hall J (2006) Human malformations and related anomalies. Oxford University Press: 800-801.

© 2014 Global Journals Inc. (US)

This page is intentionally left blank

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Comparison of Laparoscopic and Open High Ligation Procedure for Varicocele

By Rohit Maheshwari, Rajendra Mandia, Puneet Malik, Kulbhushan Haldeniya & Neelamraju Lakshmi Harish

S.M.S. Medical College, Jaipur, Rajasthan, India

Abstract- Varicocele is an important cause of infertility which can be corrected by surgery. We aim to assess and compare efficacy of laparoscopic and open palomo`s technique for varicocele. A total of 70 patients were taken in our study to assess the efficacy of treatment. Open high ligation was done on 36 patients and laparoscopic high ligation was done on 34 patients. The hospital stay was more in patients of open group than of laparoscopic group. Also, patients of laparoscopic group returned to normal activities earlier than with open group. Recurrence rates were 0% and 5.6%, post-operative hydrocele occurrence was 2.9% and 8.3%, wound complication was 0% and 5.5%, scrotal edema was 2.9% and 8.3%, and orchitis was 0% and 2.8% in laparoscopic and open group respectively. Also, post-operative pain was more in open group. There was improvement in seminal analysis in patients of both groups.

Keywords: varicocele, laparoscopic, high ligation, infertility.

GJMR-I Classification: NLMC Code: WE 850

Strictly as per the compliance and regulations of:

© 2014. Rohit Maheshwari, Rajendra Mandia, Puneet Malik, Kulbhushan Haldeniya &Neelamraju Lakshmi Harish. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Comparison of Laparoscopic and Open High Ligation Procedure for Varicocele

Rohit Maheshwari [α], Rajendra Mandia [σ], Puneet Malik [ρ], Kulbhushan Haldeniya [ω] & Neelamraju Lakshmi Harish [¥]

Abstract- Varicocele is an important cause of infertility which can be corrected by surgery. We aim to assess and compare efficacy of laparoscopic and open palomo`s technique for varicocele. A total of 70 patients were taken in our study to assess the efficacy of treatment. Open high ligation was done on 36 patients and laparoscopic high ligation was done on 34 patients. The hospital stay was more in patients of open group than of laparoscopic group. Also, patients of laparoscopic group returned to normal activities earlier than with open group. Recurrence rates were 0% and 5.6%, post-operative hydrocele occurrence was 2.9% and 8.3%, wound complication was 0% and 5.5%, scrotal edema was 2.9% and 8.3%, and orchitis was 0% and 2.8% in laparoscopic and open group respectively. Also, post-operative pain was more in open group. There was improvement in seminal analysis in patients of both groups. As compared to open high ligation, laparoscopic high ligation for varicocele has less post-operative morbidity, shorter convalescence and early return to normal activities.

Keywords: varicocele, laparoscopic, high ligation, infertility.

I. Introduction

Varicocele is dilation of the internal spermatic veins and pampiniform plexus that drain the testis.[1] The incidence is 10-20% and 35-40% in general population and infertile males respectively.[2] It causes heaviness in scrotum, difference in scrotal size, visible veins or testicular pain rarely. 90% of varicoceles are on left side, while approximately 10% are bilateral. A right sided varicocele alone is rare. Varicoceles appear to be more common in males who are tall and heavy, although associated with lower BMI than age matched controls.[3],[4],[5] There is increased incidence of varicocele in 1st degree relatives, particularly brothers of affected males, suggesting a potential genetic basis. Surgery is recommended treatment of choice for varicocele; used methods include open surgical approaches like retroperitoneal (Palomo), Inguinal (Ivanissevich) and subinguinal. Recently, percutaneous embolization and laparoscopic high ligation are also introduced. It has been suggested that laparoscopic high ligation for varicocele has the potential advantages of reduced morbidity, reduced analgesic requirements and a more rapid rate of return to work compared with the standard open surgical approach.[6],[7] Our study compares laparoscopic and open high ligation technique for varicocele treatment.

Author α ρ ω ¥: Junior Resident 3, Department of General Surgery, S.M.S. Medical College, Jaipur. e-mails: rohitdhoot86@gmail.com, drpuneetmalik@gmail.com, dr.kulbhushan.sms@gmail.com, harisnl@gmail.com

Author σ: Professor and Unit Head, Department of General Surgery, S.M.S. Medical College, Jaipur. e-mail: drrmandia@yahoo.com

II. Experimental Section

a) Patients and Methods

Our study included 70 patients divided randomly into laparoscopic group and open group. All the surgeries were done in S.M.S Hospital from 2012-2014. The study was approved by ethics committee and written consent was taken from all patients prior to entry into the study. Mean age in laparoscopic group was 26.91 years ranging from 15-50 years and in open group was 26.61 years ranging from 16-49 years.

Diagnosis was done mainly by clinical examination and was confirmed by Duplex scan.

Varicocele was graded according to Dubin and Amelar.[1]

- Grade I (small): varicocele palpable only with Valsalva's manoeuvre.
- Grade II (moderate): varicocele palpable without Valsalva's manoeuvre.
- Grade III (large): varicocele visible through the scrotal skin.
- Sub-clinical: varicocele detected only by Doppler ultrasound.

Along with all routine investigations, semen analysis was performed for each patient preoperatively.

b) Operative Technique

i. *Laparoscopic High Ligation:* This surgery was done in general anesthesia. Laparoscopy was performed with 10 mm port placed at umbilicus for video endoscopy and other two 5 mm ports, one above pubic symphysis and other in right/left iliac fossa according to laterality of varicocele. The parietal peritoneum overlying enlarged testicular vessels was divided in order to make wide window. Testicular veins were mobilized, grasped and divided in middle preserving testicular artery.

ii. *Open High Ligation:* This surgery was performed in general/spinal anesthesia by making horizontal incision medial and inferior to the ipsilateral anterior superior iliac spine and extending medially. The external oblique fascia was incised

© 2014 Global Journals Inc. (US)

in the direction of the fibers and the internal oblique muscle retracted cranially to expose the internal spermatic veins proximal to the internal inguinal ring. Testicular veins were ligated with silk ties and divided.

The outcome after surgery was assessed by examination of scrotum for complications like persistence, hematoma, hydrocele, wound infection, orchitis and recurrence in the period of follow up. Improvement in semen parameters was assessed by repeating semen analysis after 3 months postoperatively.

Analgesic requirements were determined by the number of analgesic injections required in postoperative period. The hospital stay was derived by the mean number of days till the patient is fit for discharge postoperatively. The operative time was derived by the number of minutes from time of incision given until all wounds/ports are closed. Patients were followed for a minimum of 3 months; weekly for the first month and monthly for the next 2 months.

All the data was compiled on Microsoft excel computer program and were calculated to compare various parameters of the laparoscopic and open high ligation surgeries for varicocele. Chi-square and Student t-test were applied to find level of significance. When $p < 0.05$ was found, results were considered statistically significant.

III. Results

Out of 34 patients in laparoscopic group; 30 had left sided and 4 had bilateral varicoceles. Out of 36 patients in open group; 31 had left sided and 5 had bilateral varicoceles.

In laparoscopic group; 5 patients had grade 1, 22 patients had grade 2 and 7 patients had grade 3 varicocele. In open group; 4 patients had grade 1, 22 patients had grade 2 and 10 patients had grade 3 varicocele.

In laparoscopic group; mean operative time for doing unilateral surgery was 30.17 minutes and for bilateral surgery was 51.75 minutes. In open group; mean operative time for doing unilateral surgery was 30.74 minutes and for bilateral surgery was 53.2 minutes (Table 1).

Injection diclofenac was given to patients in both the groups only when patients complained of pain. In our study, the average number of analgesic injections required was less in laparoscopic group.

No major intraoperative surgical complications occurred in our study. In laparoscopic group; 1 (2.9%) patient developed scrotal edema and 1 (2.9%) patient developed hydrocele. In open group; 1 (2.8%) patient developed orchitis, 2 (5.5%) patients developed wound seroma, 2 (5.5%) patients developed wound infection, 3 (8.3%) patients developed scrotal edema, 3 (8.3%) patients developed hydrocele and 2 (5.6%) had recurrence (Table 2).

Mean duration of post-operative hospital stay was 1.12 and 1.97 days in laparoscopic and open group respectively. (Table 3).

Mean duration of return to normal activities was 4.68 and 6.81 days in laparoscopic and open group respectively. (Table 4).

Table 1 : Mean Operative Time in Minutes

Mean Operative Time	Lap (n=30)	Open (n=31)	P-Value
Unilateral Surgery	30.17	30.74	0.64
Bilateral Surgery	51.75	53.20	0.58

Table 2 : Post-operative analgesic requirement and complications

Post-operative Pain	Lap (n=34)		Open (n=36)		P-Value
	Patients	%	Patients	%	
No analgesic injection	5	14.7	0	0.0	3.74E-09
1 injection	24	70.6	4	11.1	
2 injection	5	14.7	12	33.3	
3 or more injections	0	0.0	20	55.6	
Orchitis	0	0.0	1	2.8	0.33
Wound Infection	0	0.0	2	5.5	0.17
Wound Seroma	0	0.0	2	5.5	0.17

© 2014 Global Journals Inc. (US)

Scrotal Edema	1	2.9	3	8.3	0.34
Hydrocele	1	2.9	3	8.3	0.34
Recurrence	0	0.0	2	5.6	0.17

Table 3 : Duration of post-operative hospital stay in Days

Post-operative Hospital Stay	Lap (n=34)	Open (n=36)	P-Value
Mean	1.12	1.97	5.75E-07
Range	1-3	1-4	-

Table 4 : Duration of return to normal activities

Return to Normal Activities	Lap (n=34)	Open (n=36)	P-Value
Mean	4.68	6.81	5.43E-10
Range	4-7	4-10	-

Semen analysis was done in all patients pre and 3 months post operatively. Improvements were seen in both groups. (Table 5).

Table 5 : Semen characteristics per group

Semen Characteristic		Before Treatment	After Treatment	P-Value
Lap (n=34)	Sperm Count	70.18	75.79	2.2E-4
	Sperm Motility	60.03	65.70	2.7E-12
	Sperm Morphology	61.42	66.07	2.1E-12
Open (n=36)	Sperm Count	69.64	75.67	1.2E-4
	Sperm Motility	59.86	65.64	1.8E-12
	Sperm Morphology	60.53	66.42	1.6E-12

IV. Discussion

The indication of surgery was presence of varicocele whether symptomatic or asymptomatic as early correction of varicocele prevents future infertility.

Mean age of presentation in laparoscopic group (26.91 years) was slightly higher than in open group (26.61 years). In our study, varicocele was seen in the third decade in most of the patients. This age matched with other studies, but is contrary to studies in the developed world where varicocele is diagnosed and treated at a younger age group. [8]

In terms of laterality of varicocele, 30 (88.24%) out of 34 patients of laparoscopic group and 31 (86.11%) out of 36 patients of open group had left varicocele. This observation matched with other reports that a right sided varicocele is very rare and bilateral varicocele has incidence of 2.5-65%.[9]

In laparoscopic group; operative time for doing unilateral surgery ranged from 24 to 48 minutes. Mean time taken was 30.17 minutes. In open group; operative time for doing unilateral surgery ranged from 24 to 50 minutes. Mean time taken was 30.74 minutes. So mean time taken for open surgery was slightly more than laparoscopic group but these results were not significant as p=0.64. In laparoscopic group; operative time taken for bilateral high ligation ranged from 48 to 55 minutes. Mean time taken was 51.75 minutes. In open group; operative time taken for bilateral high ligation ranged from 50 to 60 minutes. Mean time taken was 53.20 minutes. So mean time taken for open surgery was slightly more than laparoscopic group but these results are not significant as p=0.58. In contradiction to our study mean operative time in a report by Poulsen et al. [10], was 35 and 45 minutes.

Injection diclofenac was given to patients only when patients complained of pain. In our study, the average total number of analgesic injections required postoperatively was significantly higher (p=3.74 * 10-9) in the open group as compared to the laparoscopic group. This finding was in agreement with the study by Lynch, Badenoch and McAnena (1993) [11]

Wound seroma occurred more commonly in open group (2 patients; 5.5%) and was not noted in laparoscopic group. This result was not statistically

© 2014 Global Journals Inc. (US)

significant as p=0.17. Wound infections were noted in 2 patients (5.5%) of open group and were not seen in laparoscopic group. This result was not statistically significant as p=0.17. Orchitis was noted in 1 patient (2.8%) in open group and none in laparoscopic group but this was not statistically significant as p=0.33. Scrotal edema was noted in 3 patients (8.3%) in open group and 1 patient (2.9%) in laparoscopic group. But this difference was not statistically significant as p=0.34. Hydrocele was noted in 3 patients (8.3%) in open group and 1 patient (2.9%) in laparoscopic group. But this difference was not statistically significant as p=0.35. This finding was in agreement with other studies which also show that the laparoscopic approach is associated with less chances of hydrocele because of better visualization of cord structures.[12] Recurrence was noted in 2 patients (5.6%) in open group and none in laparoscopic group but this result was not statistically significant as p=0.17.

In laparoscopic group; duration of post-operative stay ranged from 1 day to 3 days and mean stay was 1.12 days. One patient stayed for 3 days due to his postoperative pain but no specific cause of pain was found and was treated by analgesics. In open group; duration of post-operative stay ranged from 1 day to 4 days and mean stay was 1.97 days. Two patients stayed for 4 days due to wound infections which were treated with antibiotics and dressings. This difference in our study was statistically significant as p=5.75 * 10-7. Several studies have suggested that laparoscopic varicocelectomy has the advantage of a shorter hospital stay. This finding is in agreement with reports by Pouslen et al. and Lynch, Badenoch and McAnena (1993). [11]

In laparoscopic group; duration of return to normal activities ranged from 4 days to 7 days and mean was 4.68 days. In open group; duration of return to normal activities ranged from 4 days to 10 days and mean was 6.81 days. So patients in laparoscopic group returned to their normal activities earlier than open group patients and this result was statistically significant as p=5.43 * 10-10.

Semen characteristics improved significantly after treatment in both groups of patients. It is accepted that varicocelectomy improves semen parameters in patients with varicocele, with a 60-80% recovery rate. Schlesinger, Wilets and Nagler (1994) reviewed 16 studies that assessed the effect of varicocelectomy on sperm density and reported that postoperatively significant improvements were demonstrated in 12 studies. [13] They also reported that sperm motility improved after varicocelectomy in 5 out of 12 studies.

V. Conclusion

Laparoscopic high ligation of varicocele is a minimal invasive technique that is easily performed. The clear visualization and magnification provide control of the affected vessels thus decreasing post-operative recurrence. Compared to open surgery, laparoscopic high ligation has shorter convalescence, early return to normal activities and less post-operative morbidity. Thus, we recommend that laparoscopic technique for varicocele ligation to replace open method.

Reference Références Referencias

1. Nguyen HT (2007) Hernia, hydroceles, testicular torsion, and varicocele. In: Docimo SG, Canning DA, Khoury AE, eds. Clinical pediatric urology. London, UK: Informa Healthcare.
2. Cayan S, Kadioglu TC, Tefekli A, Kadioglu A, Tellaloglu S. (2000) Comparison of results and complications of high ligation surgeryand microsurgical high inguinal varicocelectomy in the treatment of varicocele. Urology 2000; 55:750-4.
3. Prabhakaran S, Kumanov P, Tomova A, Hubaveshki S, Agarwal A (2006) Adolescent varicocele: association with somatometric parameters. Urol Int.2006; 77:114-117.
4. Delaney DP, Carr MC, Kolon TF, Snyder HM 3rd, Zderic SA (2004) The physical characteristics of young males with varicocele. BJU Int.2004;94:624-626.
5. May M, Taymoorian K, Beutner S, Helke C, Braun KP, Lein M, Roigas J, Hoschke B (2006) Body size and weight as predisposing factors in varicocele. Scand J Urol Nephrol.2006; 40:45-48.
6. Donovan JL, Winfield HN (1992) Laparoscopic varix ligation.J Urol1992; 147:77-81.
7. Matsuda T, Horii Y, Higashi S, Oishi K, Takeuchi H, Yoshida O (1992) Laparoscopic varicocelectomy: a simple technique for clipligation of the spermatic vessels. J Urol 1992; 147:636-8.
8. Barqawi A, Furness P, Koyle M (2002) Laparoscopic Palomo varicocelectomy in the adolescent is safe after previous ipsilateral inguinal surgery. BJU Int 2002; 89:269-72.
9. Masha K, Saadat K, Pervez A, Nawaz H, Ahmed S, Tareen S (2003) Evaluation of low ligation and high ligation procedures of varicocele. J Coll Physicians Surg Pak2003; 13:280-3.
10. Poulsen EU, Willumsen H, Colsturp H, Jensen KM (1994) Varicocele of the testis. A comparison between laparoscopic and conventional surgery. Ugeskrift Laeger1994; 156:5683-5. (Danish).
11. Lynch WJ, Badenoch DF, McAnena OJ. (1993) Comparison of laparoscopic and open ligation of the testicular vein. Br J Urol 1993; 72:796-8.
12. Ulker V, Garibyan H, Kurth KH (1997) Comparison of inguinal and laparoscopic approaches in the treatment of varicocele. Int Urol Nephrol1997; 29:71-7. 15.
13. Schlesinger MH, Wilets IF, Nagler HM (1994) Treatment outcome after varicocelectomy. Urol Clin North Am1994; 21:517-29.

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Gallbladder Volvulus: A Case Report and Review

By Mounzer Dgheem & Charles Mouliade
Clinique Beau Soleil, France

Abstract- Gallbladder volvulus is an unusual cause of acute abdomen. After the first case published by Wendel, about 500 cases have been documented in the medical literature.This condition is defined as torsion of the gallbladder around its artery and duct in case of long and flask mesentery. The one presented here is a case of a 85 year-old woman who complained of right subcostal pain since 48 hours without fever. The echography revealed a large thick-walled gallbladder with a common bile duct diameter of 10mm without stones. Laparotomy through a right subcostal incision revealed a serohemorrhagic exudate with complete torsion of the gallbladder which was ischemic and gangrenous without perforation. Cholecysectomy was performed with a cholangiography which was normal. The anatomopathologic examination confirmed the diagnosis of acute gangrenous cholecystitis. Gallbladder volvulus is a non-frequent cause of acute cholecystitis.

GJMR-I Classification: *NLMC Code: WI 1*

Strictly as per the compliance and regulations of:

© 2014. Mounzer Dgheem & Charles Mouliade. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Gallbladder Volvulus: A Case Report and Review

Mounzer Dgheem [α] & Charles Mouliade [σ]

Abstract- Gallbladder volvulus is an unusual cause of acute abdomen. After the first case published by Wendel, about 500 cases have been documented in the medical literature.This condition is defined as torsion of the gallbladder around its artery and duct in case of long and flask mesentery.The one presented here is a case of a 85 year-old woman who complained of right subcostal pain since 48 hours without fever.The echography revealed a large thick-walled gallbladder with a common bile duct diameter of 10mm without stones. Laparotomy through a right subcostal incision revealed a sero-hemorrhagic exudate with complete torsion of the gallbladder which was ischemic and gangrenous without perforation. Cholecystectomy was performed with a cholangiography which was normal. The anatomopathologic examination confirmed the diagnosis of acute gangrenous cholecystitis. Gallbladder volvulus is a non-frequent cause of acute cholecystitis.

I. Case Report

A 85 year-old woman was admitted for a right upper abdominal pain, nausea, vomiting without fever since 48 hours.She had an insulin-dependent diabetes with no history of previous abdominal surgery or trauma, laboratory analysis revealed hyperleucocytosis with normal liver function tests. The echography revealed thick-walled gallbladder without cholelithiasis and a common bile duct dilatation of 10 mm. Right upper quadrant tenderness and positive Murphy's sign were detected on physical examination. On surgical exploration through a right subcostal incision, there was a 100 ml of sero-hemorrhagic exudate with complete torsion of the gallbladder along the axis of the cystic duct (figure1), gallbladder detortion is performed, the cystic duct was so long which measured 6 cm, it is cut at a distance of 1 cm of the common bile duct, introperative-cholangiography was normal (figure2), standard open choecystectomy was performed. Bile culture was positive for Echerchia Coli, therefore; antibiotheraby was adapted. Her postoperative course was uneventful, and she was discharged on the3rd postoperative day.

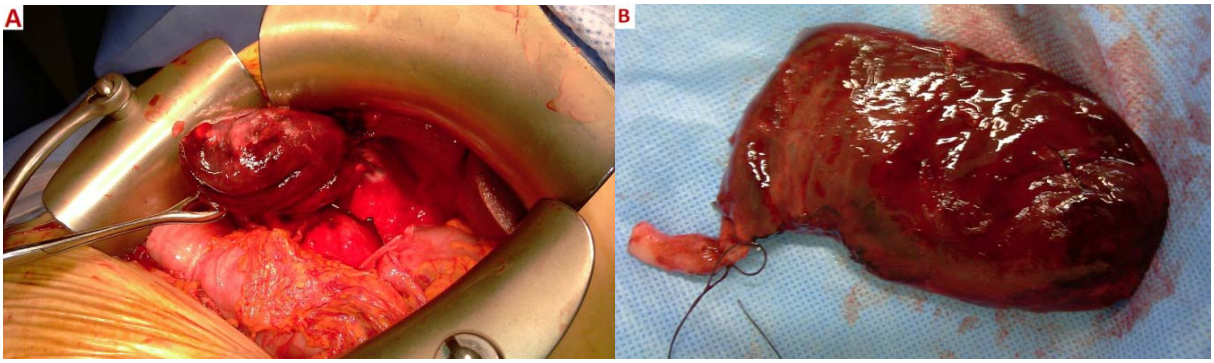


Figure 1 : A)intraoperative view of gallbladder torsion, B) specimen (gallbladder)after resection

Author α σ: Service of general and digestive surgery, Clinique Beau Soleil, 119 Avenue de Lodève, 34070 Montpellier, France.
e-mail: mounzer@live.fr

© 2014 Global Journals Inc. (US)

Figure 2 : Intraoperative cholangiography shows the long cystic duct with no stones in common bile duct

II. Discussion

Gallbladder volvulus is defined as torsion of the gallbladder around its artery and duct in case of a long and flask mesentery(1). After the first case published by Wendel in 1898(2), about 500 cases have been documented in the medical literature in 2 to 100 year-old patients (3,4). Gallbladder torsion occurs most often in elderly patients (5,6,7), but several cases were reported in children(8,9). The one presented here was a surprise intraoperative diagnosis because of the presumed acalculous cholecystitis in our diabetic patient, gallbladder volvulus commonly presents as acute cholecystitis and is rarely diagnosed preoperatively. This condition should be always suspected when making the differential diagnosis of acute cholecystitis in elderly patients especially in women. Magnetic resonance cholangiopancreatography (MRCP) is very useful in making preoperative definitive diagnosis of gallbladder torsion(10). Gallbladder torsion was reported in pregnancy(11). Gallbladder volvulus should be thought in case of acute cholecystitis that does not improve after suitable medical treatment. Delayed diagnosis can lead to dangerous complication such as necrosis and perforation of the gallbladder with a generalized peritonitis,consequently;mortality is increased especially in elderly patients who have often other comorbidities(5). laparoscopic detorsion and removal of gallbladder is the treatment of choice for gallbladder volvulus (4,12).

III. Conclusion

Gallbladder volvulus is a rare cause of acute abdomen which is rarely diagnosed before surgery. It should be added to the differential diagnosis of acute cholecystitis that does not improve after medical treatment especially in elderly women. Early diagnosis and urgent cholecystectomy in necessary for optimal prognosis.

Reference Références Referencias

1. Tarhan OR, Barut I, Dinelek H.Gallbladder volvulus: review of the literature and report of a case.Turk J Gastroenterol. 2006 Sep;17(3):209-11.
2. Wendel AV. A case of floating gallbladder and kidney complicated by cholelithiasis with perforation of the gallbladder. Ann Surg 1898; 27: 199–202.
3. Shaikh AA, Charles A, Domingo S, Schaub G.Gallbladder volvulus: report of two original cases and review of the literature. Am Surg. 2005 Jan; 71(1):87-9.
4. Pu TW, Fu CY, Lu HE, Cheng WT. Complete body-neck torsion of the gallbladder: A case report. World J Gastroenterol. 2014 Oct 14; 20 (38):14068-72.
5. Marano A, Yahchouchy-Chouillard E, Spinelli R, Iannelli A, Aura T, Fingerhut A. Gallbladder torsion: report of four cases and review of the literature. Asian J Surg. 2002 Apr; 25 (2):175-8.
6. Bagnato C, Lippolis P, Zocco G, Galatioto C, Seccia M.Uncommon cause of acute abdomen: volvulus of gallbladder with necrosis. Case report and review of literature, Ann ItalChir. 2011 Mar-Apr; 82 (2):137-40.
7. Kim SY, Moore JT. Volvulus of the gallbladder: laparoscopic detorsion and removal. SurgEndosc. 2003 Nov; 17 (11):1849.
8. Farnsworth TC, Weiss CA 3rd. Diagnosis and treatment of gallbladder torsion in a 6 year old.JSLS. 2013 Apr-Jun; 17 (2):327-9.

© 2014 Global Journals Inc. (US)

9. Matsuda A, Sasajima K, Miyamoto M, Maruyama H, Yokoyama T, Suzuki S, Matsutani T, Sugiura A, Yanagi K, Matsushita A, Arai H, Tajiri T. Laparoscopic treatment for torsion of the gallbladder in a 7-year-old female.JSLS. 2009 Jul-Sep; 13 (3):441-4.
10. Usui M, Matsuda S, Suzuki H, Ogura Y. Preoperative diagnosis of gallbladder torsion by magnetic resonance cholangiopancreatography. Scand J Gastroenterol. 2000 Feb; 35 (2):218-22.
11. Kleiss K, Choy-Hee L, Fogle R, Lindsay M.Torsion of the gallbladder in pregnancy. A case report. J Reprod Med. 2003 Mar; 48 (3):206-8.
12. Kim SY, Moore JT. Volvulus of the gallbladder: laparoscopic detorsion and removal. SurgEndosc. 2003 Nov; 17(11):1849.

© 2014 Global Journals Inc. (US)

This page is intentionally left blank

© 2014 Global Journals Inc. (US)

Global Journal of Medical Research: I
Surgeries and Cardiovascular System
Volume 14 Issue 5 Version 1.0 Year 2014
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN: 0975-5888

Preliminary Seton Before Fistulectomy: A Single Institute Experience in Treating Fistula in Ano; 1 Year Follow up Results

By Labib Al-Ozaibi, Wessam Hazim, Ali Al-Ani, Alya Al-Mazrouei, Faisal Al-Badri & Ahmed Al-Jaziri

Dubai Health Authority- Rashid Hospital, United Arab Emirates

Abstract- *Aim:* To analyze the results of treating fistula-in-ano using a preliminary Seton followed by fistulectomy and sphincter repair 2-4 months later.

Method: This is a retrospective study of 56 patients with transsphincteric and complex anal fistulas, managed preliminary with loose Seton followed by fistulectomy and sphincter repair 2-4 months later between March 2011 and March 2013. Patients were seen at the clinic 1 week, 3 months and 1 year after the surgery. Patients were observed for complications and recurrence and incontinence was noted according to Cleveland Clinic score.

Result: Twenty-five (45%) of the fistulas were high or complex. Twenty-nine (51.7%) of the patients had a history of previous surgery. Forty-nine (88%) of the cases were done as a day case surgeries.The Seton was kept in situ for 2-5 months (average 2.6 months).

Keywords: *anal fistula; seton; fistulectomy.*

GJMR-I Classification: *NLMC Code: WI 480*

Strictly as per the compliance and regulations of:

© 2014. Labib Al-Ozaibi, Wessam Hazim, Ali Al-Ani, Alya Al-Mazrouei, Faisal Al-Badri & Ahmed Al-Jaziri. This is a research/review paper, distributed under the terms of the Creative Commons Attribution-Noncommercial 3.0 Unported License http://creativecommons.org/licenses/by-nc/3.0/), permitting all non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

Preliminary Seton Before Fistulectomy: A Single Institute Experience in Treating Fistula in Ano; 1 Year Follow up Results

Labib Al-Ozaibi [α], Wessam Hazim [σ], Ali Al-Ani [ρ], Alya Al-Mazrouei [ω], Faisal Al-Badri [¥] & Ahmed Al-Jaziri [§]

Abstract- Aim: To analyze the results of treating fistula-in-ano using a preliminary Seton followed by fistulectomy and sphincter repair 2-4 months later.

Method: This is a retrospective study of 56 patients with transsphincteric and complex anal fistulas, managed preliminary with loose Seton followed by fistulectomy and sphincter repair 2-4 months later between March 2011 and March 2013. Patients were seen at the clinic 1 week, 3 months and 1 year after the surgery. Patients were observed for complications and recurrence and incontinence was noted according to Cleveland Clinic score.

Result: Twenty-five (45%) of the fistulas were high or complex. Twenty-nine (51.7%) of the patients had a history of previous surgery.Forty-nine (88%) of the cases were done as a day case surgeries.The Seton was kept in situ for 2-5 months (average 2.6 months). Complete healing was achieved within 3.7 weeks on average (2-8 weeks). The mean follow up was 20.5 months (12-36 months). Two patients had temporary flatus incontinence which had both resolved over a period of 2-3 months. Recurrence happened in two (3.6 %) patients and 54 (94.4%) of the patients had complete cure.

Conclusion: Preliminary Seton followed by fistulectomy and sphincteroplasty has shown to be highly effective in treating transsphincteric and complex fistulas with low recurrence rates (2/56=3.6%) and no risk of subsequent incontinence.

Keywords: anal fistula; seton; fistulectomy.

I. Introduction

The aim of surgical treatment of anal fistulas is to cure the disease by preventing recurrence while ensuring that faecal continence is maintained. Normally, a 'lay-open' fistulotomy or fistulectomy technique is used for inter-sphincteric or low trans-sphincteric fistulas, but high trans-sphincteric or supra-sphincteric fistulas would require division of a large portion of the external sphincter, thereby increasing the chance of faecal incontinence. Many procedures have been described. Current management remains dependent on surgeon preference between options like fistulotomy, fistulectomy, loose or cutting Seton insertion, advancement flaps, fibrin glue or anal plugs with variable results.

The use of Seton in the treatment of anal fistulas has been ongoing for centuries. One of the earliest papers written by Hippocrates in 400 BC described fistulotomy as well as the use of a cutting Seton made of horse hair wrapped with lint threads[1].

The Seton works by several mechanisms. Firstly, it helps to identify and mark the fistulous tract. Secondly, it promotes fibrosis in the surrounding tissue. Thirdly, it encourages drainage and prevents formation of new abscesses. And finally it decreases the risk of incontinence as scarring prevents retraction of the sphincter.

Seton can be used for long term palliation to avoid septic and painful exacerbations by establishing effective drainage; most often in patients with Crohn's disease[2] or it can be used as part of a staged fistulectomy before use of advanced techniques (fistulectomy, advancement flap). Such strategy protects against the consequences of cutting the sphincter. The goal of this study is to report our experience in treating anal fistulas using the preliminary Seton technique before fistulectomy and compare the safety and efficacy of reduction of incontinence and recurrence in this method as compared to other methods in the literature.

II. Method

Data collected from the records of 56 patients who underwent preliminary Seton placement followed 2-4 months later by fistulectomy and sphincter repair during the period of March 2011 — March 2013. Fistulae were characterized using Parks' classification. Perianal fistulas were defined as complex if they had multiple external openings, high fistulas if the internal opening which was at the level of the dentate line and low fistulas if the internal opening was below the dentate line. Patients with concomitant anal pathology and patients with inflammatory bowel disease were excluded from the study.

Autho α §: Rashid Hospital Dubai Health Authority.
e-mails: lsalozaibi@gmail.com, aaljaziri@dha.gov.ae

© 2014 Global Journals Inc. (US)

The entire procedure was performed under general anaesthesia with the patient in the lithotomy position. After initial evaluation, the external and internal openings were located using a probe and air injection along the track. A loose Seton using 2 braided, non-absorbable sutures (4/0 prolene) was looped around the fistula tract, (Figure 1). It was not tightened at any time during the follow-up and was not removed.

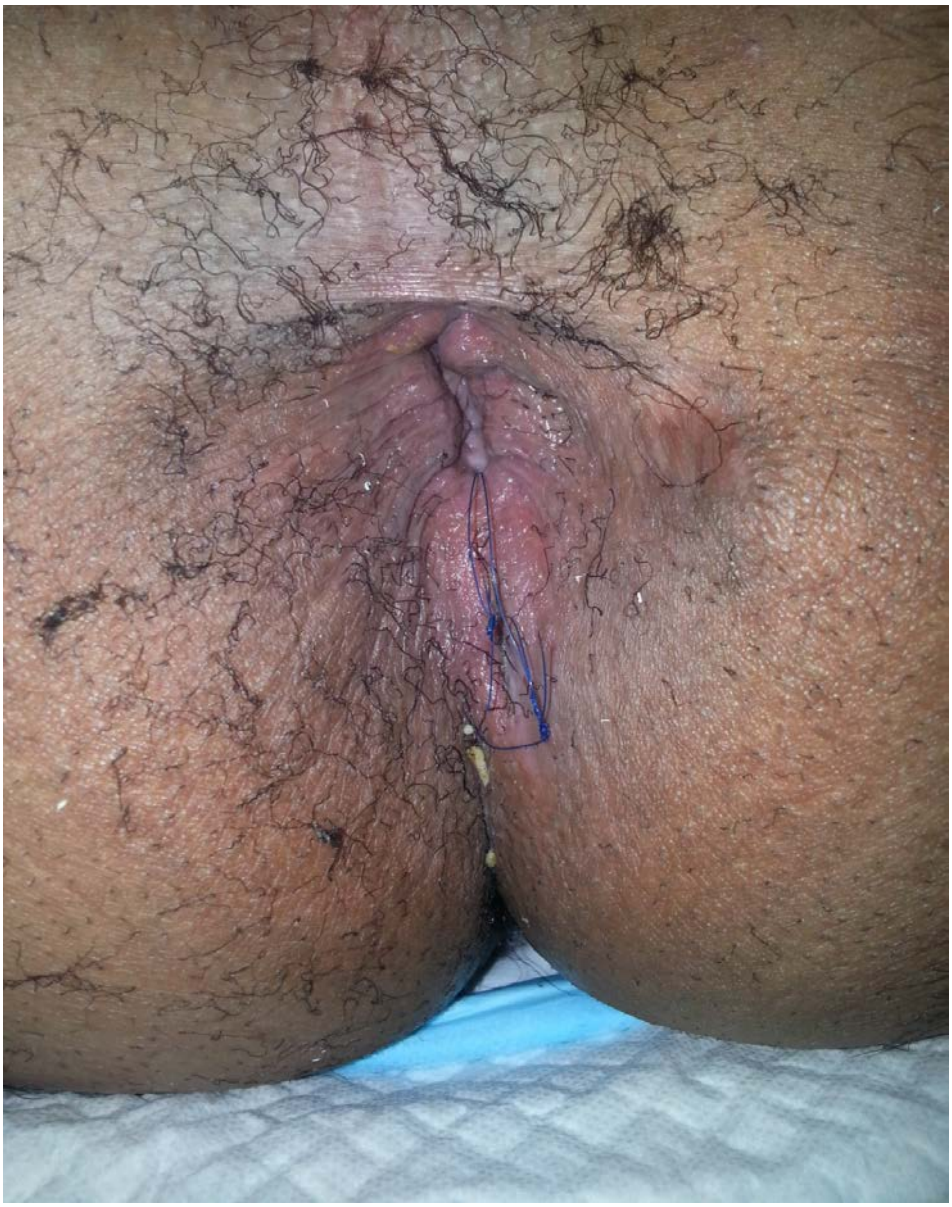


Figure 1 : Seton in situ

© 2014 Global Journals Inc. (US)

2-4months later the fistula was completely excised with immediate repair of the sphincters and the wound kept open,(Figure 2a, b).

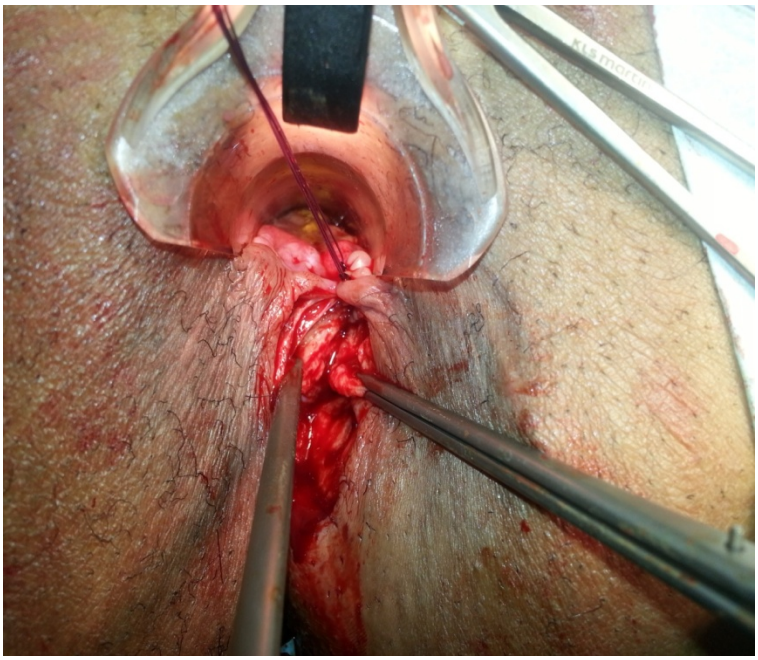


Figure 2a : After fistulectomy showing the sphincters before repair

Figure 2b : After the sphincter repair

© 2014 Global Journals Inc. (US)

During a follow-up period of 12-36 months details of healing (i.e. no signs of discharge), recurrence, and complications were gathered. Patients were followed up at the clinic after 1 week, 3 months and after 1 year. Continence was evaluated according to Cleveland Clinic score[3]. The excised fistulas were sent for histopathology to rule out inflammatory bowel disease or cancer.

The data were analyzed using IBM SPSS STATISTICS BASE 21.

III. Results

After obtaining the ethical committee approval, the record of 56 patients with transsphincteric and complex anal fistula who were managed with preliminary loose Seton followed by fistulectomy and sphincteroplasty were reviewed.Fifty-four (96.4%) of the patients were men and Two (3.6%) were women. The overall mean age was 39.5 (range 25-61).The types of fistulas are depicted in Table 1.

Table 1 : Type of fistulas

Type of Fistula	Number	Percent
Low transsphincteric	31	55
High transsphincteric	9	16
Complex	16	29
Total	56	100

Twenty-nine (52%) of the patients gave history of previous surgery, 25(45%) had incision & drainage of perianal abscesses and four (7%) had previous fistula surgery. The entire procedure was done under general anaesthesia. Preliminary Seton insertion was done as a day case surgery. The Seton was kept in situ for a period of 2-5 months (average 2.6M). The second procedure was fistulectomy and sphincter repair for which49 (88%) were done as a day case surgeries.

The mean follow up was 20.5 months (12-36 months). Six (10.7%) patients experienced post-operative pain which required analgesia while three (5.3%) developed bleeding; requiring surgery in one patient and only pressure dressing in the other two. The complete wound healing time (i.e. no more need for wound dressing) was between 2-8 weeks (mean 3.7 weeks).

While two patients (3.6%) reported a transient incontinence of gas in the immediate postoperative period (score 3 and 4, respectively according to the Cleveland Incontinence Score), which lasted for 3 months there was no incontinence in any of the patients in the longer follow up. The fistulas were completely cured in 54(96.4%) of patients. Recurrence occurred in two patients (3.6%); one was re-operated again for which the same procedure was repeated again -loose Seton for 4 months followed by fistulectomy and sphincter repair- and during the follow up he didn't show any signs of recurrence while the other patient did not attend the follow up; he was contacted by phone and reported that he had been re-operated on in another hospital but six months later he had recurrence.

IV. Discussion

Surgical treatment of fistula-in-ano is associated with the risk of incontinence and recurrence. Several operative techniques were established to reduce these complications but till today none has been shown to be 100% successful. Post-operative anal incontinence after fistulotomy has been reported to be 20.3%[4]. Arroyo A et al[5], who combined fistulotomy with sphincter reconstruction concluded that continence were improved in incontinent patients and were not jeopardized in continent ones. The patients who reported postoperative incontinence in his study were 16.6%. Several risk factors are associated with the postoperative incontinence, including recurrent or complex fistulas, multiple previous drainages[6], and type of operative procedure[7].

In a prospective audit,Sileri P et al[8] demonstrated that a high number of complex anal fistulae has been treated by seton placement and a good outcome was achieved in the majority of patients. The selection of Seton type and technique depends on surgeon preference. Gokulakkrishna Subhaset al[9] described all the available variations in materials and techniques for seton treatment.

The use of loose Seton alone in the treatment of complex anal fistulas has been reported in several studies with variable results. Some patients were cured by this technique but the success rate tumbled over time. This approach avoids the risk of incontinence complications that may arise due to division of the external sphincter but many patients develop further sepsis that usually requires surgery[10].

The use of Seton drainage before definitive surgery has been used in an attempt to decrease the risk of incontinence and recurrence. Several reports have found Seton to be safe, with low incidence of recurrence and incontinence. Different surgeons use the Seton in different ways. Russell K et al[11], performed staged fistulotomy using a Seton. They applied the Seton around the distal half of the intact external sphincter after dividing the cephaled portion of the tract; followed 6-8 weeks later by dividing of the remaining external sphincter, and a recurrence rate of 3% was noted. Kennedy and Zegarra[12] did the same first stage fistulotomy and Seton placement but in the second stage the Seton was removed rather than performing the second stage division of muscles. It minimized the risk of incontinence and primary healing occurred in 78%. Fung AK et al[13] also used the technique of laying open the subcutaneous tract and insertion of loose seton for the part of the tract related to the sphincter complex which was removed after a median length of 7 months

© 2014 Global Journals Inc. (US)

with a recurrence rate of 19%. In the study by Ratto C et al[14], he used Seton drainage in 40.3% of the patients followed later by fistulotomy and end to end primary sphincteroplasty. There was no significant change in the fecal incontinence score and the fistula recurrence was observed in 3 out of 72 patients (4.3%). Pearl RK et al[15] reported that a staged fistulotomy using a Seton is a safe and effective method of treating high or complicated anorectal fistulas with major incontinence of 5% and a recurrence rate of 3%.

An alternative technique for treating complex, high transsphincteric anal fistulas using the Seton was reported in the studies of Subhas G et al[16] and GalisRozen et al[17]. Patients were asked to rotate the Seton daily, one revolution in each direction, pulling the knot through the fistula tract. The progressive migration technique resulted in the gradual healing and eradication of the fistula tract in 75% of patients, with no recurrence (Setons completely worked their way to the surface, or tract migration was extensive enough to allow a safe completion fistulotomy).

Loose Seton is preferable to the cutting Seton; the later procedure yields fairly good results in regards to curing the fistula but it's painful, may result in pressure necrosis of the full thickness of the sphincter muscle resulting in sepsis and increases rate of anal incontinence[18].

V. Conclusion

Preliminary Seton followed by fistulectomy and immediate sphincter repair has shown to be highly effective in treating transsphincteric and complex fistulas with low recurrence rate (2/56=3.6%) and no risk of subsequent incontinence in the population we studied.

References Références Referencias

1. Adams F.**The genuine works of Hippocrates. London:** C and J Adlard; 1849. p. 816-9.
2. Takesue Y, Ohge H, Yokoyama T, Murakami Y, Imamura Y, Sueda T. **Long term results of setondrainage on complex anal fistulae in patients with Crohn's disease.** J Gastroenterol (2002); 37(11):912-5.
3. Jorge JM1, Wexner SD. **Etiology and management of fecal incontinence.** Dis Colon Rectum. 1993 Jan; 36(1):77-97.
4. Takayuki T., Makoto M., Takashi K., et al. **Factors affecting continence after fistulotomy for intersphincteric fistula in ano.** Int J Colorectal Dis (2007) 22:1071-1075.
5. Arroyo A, Perez-Legaz J, Moya P, et al. **Fistulotomy and sphincter reconstruction in the treatment of complex fistula in ano: long-term clinical and manometric results.** Ann Surg. (2012)May; 255(5):935-9.
6. Jordan J., RoigJV., Garcia-Armengol J., Garcia-Granero E., Solana A.,. **Risk factors for recurrence and incontinence after anal fistula surgery.** Colorectal Dis (2010) Mar; 12(3):254-60.
7. Garcia-Aguilar J, Belmonte C, Wong WD, Goldberg SM, Madoff RD. **Anal fistula surgery: Factors associated with recurrence and incontinence.** Dis Colon Rectum (1996) Jul;39(7):723-729.
8. Sileri P, Cadeddu F, D'Ugo S, Franceschilli L. **Surgery for fistula-in-ano in a specialist colorectal unit: a critical appraisal.** BMC Gastroenterol (2011) Nov 9;11:120.
9. Gokulakkrishna Subhas, Jasneet SB, Ahmed A, Amruta U. **Setons in the treatment of anal fistula: Review of variations in material and techniques.** Dig Surg (2012);29:292-300.
10. Buchanan GN, Owen HA, Torkington J, Lunniss PJ, Nicholls RJ, Cohen CR. **Long-term outcome-following loose-seton technique for external sphincter preservation in complex anal fistula.** Br J Surg. (2004) Apr;91(4):476-80.
11. Russell K, John R, Charles P, Robert I, M. Leela, Richard L, Jose R, Hernad A. **Role of the setonin the management of anorectal fistulas.** Dis Colon Rectum, June (1993) Vol.36, No.6.
12. Kennedy HL, Zegarra JP. **Fistulotomy without external sphincter division for high anal fistula.** Br J Surg (1990);77:898-901.
13. Fung AK, Card GV, Ross NP, Yule SR, Aly EH. **Operative strategy for fistula-in-ano withoutdivision of the anal sphincter.** Ann R CollSurg Engl.(2013) Oct;95(7):461-467.
14. Ratto C, Litta F, Parello A, Zaccone G, Donisi L, De Simone V. **Fistulotomy with end to end primary sphincteroplasty for anal fistula: results from a prospective study.** Dis Colon Rectum.(2013) Feb;56(2):226-33.
15. Pearl RK, Andrews JR, Orsay CP, Weisman RI, Prasad ML, Nelson RL, Cintron JR, Abcarian **H.Role of the seton in the management of anorectal fistulas. Dis Colon Rectum.** (1993) Jun; 36(6):573-7.
16. Subhas G, Gupta A, Balaraman S, Mittal VK, Pearlman R. **Non-cutting setons for progressive migration of complex fistula tracts: a new spin on an old technique.** Int J Colorectal Dis. (2011)Jun;26(6):793-8.
17. Galis-Rozen E, Tulchinsky H, Rosen A, Eldar S, Rabau M, Stepanski A, Klausner JM, Ziv Y. **Long-term outcome of loose seton for complex anal fistula: a two-centre study of patients with and without Crohn's disease.** Colorectal Dis. (2010) Apr;12(4):358-62.
18. Hämäläinen KP, Sainio AP. **Cutting seton for anal fistulas: high risk of minor control defects.** Dis Colon Rectum 1997; 40:1443.

© 2014 Global Journals Inc. (US)

Global Journals Inc. (US) Guidelines Handbook 2014

www.GlobalJournals.org

FELLOWS

FELLOW OF ASSOCIATION OF RESEARCH SOCIETY IN MEDICAL (FARSM)

Global Journals Incorporate (USA) is accredited by Open Association of Research Society (OARS), U.S.A and in turn, awards "FARSM" title to individuals.The 'FARSM' title is accorded to a selected professional after the approval of the Editor-in-Chief/Editorial Board Members/Dean.

- The "FARSM" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall,Ph.D., FARSS or William Walldroff, M.S., FARSM.

FARSM accrediting is an honor. It authenticates your research activities. After recognition as FARSM, you can add 'FARSM' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, and Visiting Card etc.

The following benefits can be availed by you only for next three years from the date of certification:

FARSM designated members are entitled to avail a 40% discount while publishing their research papers (of a single author) with Global Journals Incorporation (USA), if the same is accepted by Editorial Board/Peer Reviewers. If you are a main author or co-author in case of multiple authors, you will be entitled to avail discount of 10%.

Once FARSM title is accorded, the Fellow is authorized to organize a symposium/seminar/conference on behalf of Global Journal Incorporation (USA). The Fellow can also participate in conference/seminar/symposium organized by another institution as representative of Global Journal. In both the cases, it is mandatory for him to discuss with us and obtain our consent.

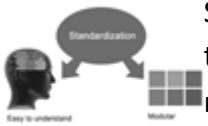
You may join as member of the Editorial Board of Global Journals Incorporation (USA) after successful completion of three years as Fellow and as Peer Reviewer. In addition, it is also desirable that you should organize seminar/symposium/conference at least once.

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

© Copyright by Global Journals Inc.(US) | Guidelines Handbook

The FARSM can go through standards of OARS. You can also play vital role if you have any suggestions so that proper amendment can take place to improve the same for the benefit of entire research community.

As FARSM, you will be given a renowned, secure and free professional email addres with 100 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.



The FARSM will be eligible for a free application of standardization of their researches. Standardization of research will be subject to acceptability within stipulated norms as the next step after publishing in a journal. We shall depute a team of specialized research professionals who will render their services for elevating your researches to next higher level, which is worldwide open standardization.

The FARSM member can apply for grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A. Once you are designated as FARSM, you may send us a scanned copy of all of you credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria. After certification of all your credentials by OARS, they will be published on your Fellow Profile link on website https://associationofresearch.org which will be helpful to upgrade the dignity.

The FARSM members can avail the benefits of free research podcasting in Global Research Radio with their research documents. After publishing the work, (including published elsewhere worldwide with proper authorization) you can upload your research paper with your recorded voice or you can utilize chargeable services of our professional RJs to record your paper in their voice on request.

The FARSM member also entitled to get the benefits of free research podcasting of their research documents through video clips. We can also streamline your conference videos and display your slides/ online slides and online research video clips at reasonable charges, on request.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

The FARSM is eligible to earn from sales proceeds of his/her researches/reference/review Books or literature, while publishing with Global Journals. The FARSS can decide whether he/she would like to publish his/her research in a closed manner. In this case, whenever readers purchase that individual research paper for reading, maximum 60% of its profit earned as royalty by Global Journals, will be credited to his/her bank account. The entire entitled amount will be credited to his/her bank account exceeding limit of minimum fixed balance. There is no minimum time limit for collection. The FARSM member can decide its price and we can help in making the right decision.

The FARSM member is eligible to join as a paid peer reviewer at Global Journals Incorporation (USA) and can get remuneration of 15% of author fees, taken from the author of a respective paper. After reviewing 5 or more papers you can request to transfer the amount to your bank account.

MEMBER OF ASSOCIATION OF RESEARCH SOCIETY IN MEDICAL (MARSM)

The ' MARSM ' title is accorded to a selected professional after the approval of the Editor-in-Chief / Editorial Board Members/Dean.

The "MARSM" is a dignified ornament which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., MARSM or William Walldroff, M.S., MARSM.

MARSM accrediting is an honor. It authenticates your research activities. Afterbecoming MARSM,you can add 'MARSM' title with your name as you use this recognition as additional suffix to your status. This will definitely enhance and add more value and repute to your name. You may use it on your professional Counseling Materials such as CV, Resume, Visiting Card and Name Plate etc.

The following benefitscan be availed by you only for next three years from the date of certification.

MARSM designated members are entitled to avail a 25% discount while publishing their research papers (of a single author) in Global Journals Inc., if the same is accepted by our Editorial Board and Peer Reviewers. If you are a main author or co-author of a group of authors, you will get discount of 10%.

As MARSM, you willbe given a renowned, secure and free professional email address with 30 GB of space e.g. johnhall@globaljournals.org. This will include Webmail, Spam Assassin, Email Forwarders,Auto-Responders, Email Delivery Route tracing, etc.

© Copyright by Global Journals Inc.(US) | Guidelines Handbook

We shall provide you intimation regarding launching of e-version of journal of your stream time to time.This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

The MARSM member can apply for approval, grading and certification of standards of their educational and Institutional Degrees to Open Association of Research, Society U.S.A.

Once you are designated as MARSM, you may send us a scanned copy of all of your credentials. OARS will verify, grade and certify them. This will be based on your academic records, quality of research papers published by you, and some more criteria.

It is mandatory to read all terms and conditions carefully.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

AUXILIARY MEMBERSHIPS

Institutional Fellow of Open Association of Research Society (USA) - OARS (USA)

Global Journals Incorporation (USA) is accredited by Open Association of Research Society, U.S.A (OARS) and in turn, affiliates research institutions as "Institutional Fellow of Open Association of Research Society" (IFOARS).

The "FARSC" is a dignified title which is accorded to a person's name viz. Dr. John E. Hall, Ph.D., FARSC or William Walldroff, M.S., FARSC.

The IFOARS institution is entitled to form a Board comprised of one Chairperson and three to five board members preferably from different streams. The Board will be recognized as "Institutional Board of Open Association of Research Society"-(IBOARS).

The Institute will be entitled to following benefits:

The IBOARS can initially review research papers of their institute and recommend them to publish with respective journal of Global Journals. It can also review the papers of other institutions after obtaining our consent. The second review will be done by peer reviewer of Global Journals Incorporation (USA) The Board is at liberty to appoint a peer reviewer with the approval of chairperson after consulting us.

The author fees of such paper may be waived off up to 40%.

The Global Journals Incorporation (USA) at its discretion can also refer double blind peer reviewed paper at their end to the board for the verification and to get recommendation for final stage of acceptance of publication.

The IBOARS can organize symposium/seminar/conference in their country on behalf of Global Journals Incorporation (USA)-OARS (USA). The terms and conditions can be discussed separately.

The Board can also play vital role by exploring and giving valuable suggestions regarding the Standards of "Open Association of Research Society, U.S.A (OARS)" so that proper amendment can take place for the benefit of entire research community. We shall provide details of particular standard only on receipt of request from the Board.

The board members can also join us as Individual Fellow with 40% discount on total fees applicable to Individual Fellow. They will be entitled to avail all the benefits as declared. Please visit Individual Fellow-sub menu of GlobalJournals.org to have more relevant details.

© Copyright by Global Journals Inc.(US) | Guidelines Handbook

We shall provide you intimation regarding launching of e-version of journal of your stream time to time. This may be utilized in your library for the enrichment of knowledge of your students as well as it can also be helpful for the concerned faculty members.

After nomination of your institution as "Institutional Fellow" and constantly functioning successfully for one year, we can consider giving recognition to your institute to function as Regional/Zonal office on our behalf.
The board can also take up the additional allied activities for betterment after our consultation.

The following entitlements are applicable to individual Fellows:

Open Association of Research Society, U.S.A (OARS) By-laws states that an individual Fellow may use the designations as applicable, or the corresponding initials. The Credentials of individual Fellow and Associate designations signify that the individual has gained knowledge of the fundamental concepts. One is magnanimous and proficient in an expertise course covering the professional code of conduct, and follows recognized standards of practice.

Open Association of Research Society (US)/ Global Journals Incorporation (USA), as described in Corporate Statements, are educational, research publishing and professional membership organizations. Achieving our individual Fellow or Associate status is based mainly on meeting stated educational research requirements.

Disbursement of 40% Royalty earned through Global Journals : Researcher = 50%, Peer Reviewer = 37.50%, Institution = 12.50% E.g. Out of 40%, the 20% benefit should be passed on to researcher, 15 % benefit towards remuneration should be given to a reviewer and remaining 5% is to be retained by the institution.

We shall provide print version of 12 issues of any three journals [as per your requirement] out of our 38 journals worth $ 2376 USD.

Other:

The individual Fellow and Associate designations accredited by Open Association of Research Society (US) credentials signify guarantees following achievements:

- The professional accredited with Fellow honor, is entitled to various benefits viz. name, fame, honor, regular flow of income, secured bright future, social status etc.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

- In addition to above, if one is single author, then entitled to 40% discount on publishing research paper and can get 10%discount if one is co-author or main author among group of authors.
- The Fellow can organize symposium/seminar/conference on behalf of Global Journals Incorporation (USA) and he/she can also attend the same organized by other institutes on behalf of Global Journals.
- The Fellow can become member of Editorial Board Member after completing 3yrs.
- The Fellow can earn 60% of sales proceeds from the sale of reference/review books/literature/publishing of research paper.
- Fellow can also join as paid peer reviewer and earn 15% remuneration of author charges and can also get an opportunity to join as member of the Editorial Board of Global Journals Incorporation (USA)
- • This individual has learned the basic methods of applying those concepts and techniques to common challenging situations. This individual has further demonstrated an in–depth understanding of the application of suitable techniques to a particular area of research practice.

Note :

"

- In future, if the board feels the necessity to change any board member, the same can be done with the consent of the chairperson along with anyone board member without our approval.
- In case, the chairperson needs to be replaced then consent of 2/3rd board members are required and they are also required to jointly pass the resolution copy of which should be sent to us. In such case, it will be compulsory to obtain our approval before replacement.
- In case of "Difference of Opinion [if any]" among the Board members, our decision will be final and binding to everyone.

"

Process of submission of Research Paper

The Area or field of specialization may or may not be of any category as mentioned in 'Scope of Journal' menu of the GlobalJournals.org website. There are 37 Research Journal categorized with Six parental Journals GJCST, GJMR, GJRE, GJMBR, GJSFR, GJHSS. For Authors should prefer the mentioned categories. There are three widely used systems UDC, DDC and LCC. The details are available as 'Knowledge Abstract' at Home page. The major advantage of this coding is that, the research work will be exposed to and shared with all over the world as we are being abstracted and indexed worldwide.

The paper should be in proper format. The format can be downloaded from first page of 'Author Guideline' Menu. The Author is expected to follow the general rules as mentioned in this menu. The paper should be written in MS-Word Format (*.DOC,*.DOCX).

The Author can submit the paper either online or offline. The authors should prefer online submission.Online Submission: There are three ways to submit your paper:

(A) (I) First, register yourself using top right corner of Home page then Login. If you are already registered, then login using your username and password.

(II) Choose corresponding Journal.

(III) Click 'Submit Manuscript'. Fill required information and Upload the paper.

(B) If you are using Internet Explorer, then Direct Submission through Homepage is also available.

(C) If these two are not conveninet , and then email the paper directly to dean@globaljournals.org.

Offline Submission: Author can send the typed form of paper by Post. However, online submission should be preferred.

Preferred Author Guidelines

MANUSCRIPT STYLE INSTRUCTION (Must be strictly followed)

Page Size: 8.27" X 11'"

- Left Margin: 0.65
- Right Margin: 0.65
- Top Margin: 0.75
- Bottom Margin: 0.75
- Font type of all text should be Swis 721 Lt BT.
- Paper Title should be of Font Size 24 with one Column section.
- Author Name in Font Size of 11 with one column as of Title.
- Abstract Font size of 9 Bold, "Abstract" word in Italic Bold.
- Main Text: Font size 10 with justified two columns section
- Two Column with Equal Column with of 3.38 and Gaping of .2
- First Character must be three lines Drop capped.
- Paragraph before Spacing of 1 pt and After of 0 pt.
- Line Spacing of 1 pt
- Large Images must be in One Column
- Numbering of First Main Headings (Heading 1) must be in Roman Letters, Capital Letter, and Font Size of 10.
- Numbering of Second Main Headings (Heading 2) must be in Alphabets, Italic, and Font Size of 10.

You can use your own standard format also.
Author Guidelines:

1. General,

2. Ethical Guidelines,

3. Submission of Manuscripts,

4. Manuscript's Category,

5. Structure and Format of Manuscript,

6. After Acceptance.

1. GENERAL

Before submitting your research paper, one is advised to go through the details as mentioned in following heads. It will be beneficial, while peer reviewer justify your paper for publication.

Scope

The Global Journals Inc. (US) welcome the submission of original paper, review paper, survey article relevant to the all the streams of Philosophy and knowledge. The Global Journals Inc. (US) is parental platform for Global Journal of Computer Science and Technology, Researches in Engineering, Medical Research, Science Frontier Research, Human Social Science, Management, and Business organization. The choice of specific field can be done otherwise as following in Abstracting and Indexing Page on this Website. As the all Global

Journals Inc. (US) are being abstracted and indexed (in process) by most of the reputed organizations. Topics of only narrow interest will not be accepted unless they have wider potential or consequences.

2. ETHICAL GUIDELINES

Authors should follow the ethical guidelines as mentioned below for publication of research paper and research activities.

Papers are accepted on strict understanding that the material in whole or in part has not been, nor is being, considered for publication elsewhere. If the paper once accepted by Global Journals Inc. (US) and Editorial Board, will become the copyright of the Global Journals Inc. (US).

Authorship: The authors and coauthors should have active contribution to conception design, analysis and interpretation of findings. They should critically review the contents and drafting of the paper. All should approve the final version of the paper before submission

The Global Journals Inc. (US) follows the definition of authorship set up by the Global Academy of Research and Development. According to the Global Academy of R&D authorship, criteria must be based on:

1) Substantial contributions to conception and acquisition of data, analysis and interpretation of the findings.

2) Drafting the paper and revising it critically regarding important academic content.

3) Final approval of the version of the paper to be published.

All authors should have been credited according to their appropriate contribution in research activity and preparing paper. Contributors who do not match the criteria as authors may be mentioned under Acknowledgement.

Acknowledgements: Contributors to the research other than authors credited should be mentioned under acknowledgement. The specifications of the source of funding for the research if appropriate can be included. Suppliers of resources may be mentioned along with address.

Appeal of Decision: The Editorial Board's decision on publication of the paper is final and cannot be appealed elsewhere.

Permissions: It is the author's responsibility to have prior permission if all or parts of earlier published illustrations are used in this paper.

Please mention proper reference and appropriate acknowledgements wherever expected.

If all or parts of previously published illustrations are used, permission must be taken from the copyright holder concerned. It is the author's responsibility to take these in writing.

Approval for reproduction/modification of any information (including figures and tables) published elsewhere must be obtained by the authors/copyright holders before submission of the manuscript. Contributors (Authors) are responsible for any copyright fee involved.

3. SUBMISSION OF MANUSCRIPTS

Manuscripts should be uploaded via this online submission page. The online submission is most efficient method for submission of papers, as it enables rapid distribution of manuscripts and consequently speeds up the review procedure. It also enables authors to know the status of their own manuscripts by emailing us. Complete instructions for submitting a paper is available below.

Manuscript submission is a systematic procedure and little preparation is required beyond having all parts of your manuscript in a given format and a computer with an Internet connection and a Web browser. Full help and instructions are provided on-screen. As an author, you will be prompted for login and manuscript details as Field of Paper and then to upload your manuscript file(s) according to the instructions.

To avoid postal delays, all transaction is preferred by e-mail. A finished manuscript submission is confirmed by e-mail immediately and your paper enters the editorial process with no postal delays. When a conclusion is made about the publication of your paper by our Editorial Board, revisions can be submitted online with the same procedure, with an occasion to view and respond to all comments.

Complete support for both authors and co-author is provided.

4. MANUSCRIPT'S CATEGORY

Based on potential and nature, the manuscript can be categorized under the following heads:

Original research paper: Such papers are reports of high-level significant original research work.

Review papers: These are concise, significant but helpful and decisive topics for young researchers.

Research articles: These are handled with small investigation and applications

Research letters: The letters are small and concise comments on previously published matters.

5.STRUCTURE AND FORMAT OF MANUSCRIPT

The recommended size of original research paper is less than seven thousand words, review papers fewer than seven thousands words also.Preparation of research paper or how to write research paper, are major hurdle, while writing manuscript. The research articles and research letters should be fewer than three thousand words, the structure original research paper; sometime review paper should be as follows:

Papers: These are reports of significant research (typically less than 7000 words equivalent, including tables, figures, references), and comprise:

(a)Title should be relevant and commensurate with the theme of the paper.

(b) A brief Summary, "Abstract" (less than 150 words) containing the major results and conclusions.

(c) Up to ten keywords, that precisely identifies the paper's subject, purpose, and focus.

(d) An Introduction, giving necessary background excluding subheadings; objectives must be clearly declared.

(e) Resources and techniques with sufficient complete experimental details (wherever possible by reference) to permit repetition; sources of information must be given and numerical methods must be specified by reference, unless non-standard.

(f) Results should be presented concisely, by well-designed tables and/or figures; the same data may not be used in both; suitable statistical data should be given. All data must be obtained with attention to numerical detail in the planning stage. As reproduced design has been recognized to be important to experiments for a considerable time, the Editor has decided that any paper that appears not to have adequate numerical treatments of the data will be returned un-refereed;

(g) Discussion should cover the implications and consequences, not just recapitulating the results; conclusions should be summarizing.

(h) Brief Acknowledgements.

(i) References in the proper form.

Authors should very cautiously consider the preparation of papers to ensure that they communicate efficiently. Papers are much more likely to be accepted, if they are cautiously designed and laid out, contain few or no errors, are summarizing, and be conventional to the approach and instructions. They will in addition, be published with much less delays than those that require much technical and editorial correction.

The Editorial Board reserves the right to make literary corrections and to make suggestions to improve briefness.

It is vital, that authors take care in submitting a manuscript that is written in simple language and adheres to published guidelines.

Format

Language: The language of publication is UK English. Authors, for whom English is a second language, must have their manuscript efficiently edited by an English-speaking person before submission to make sure that, the English is of high excellence. It is preferable, that manuscripts should be professionally edited.

Standard Usage, Abbreviations, and Units: Spelling and hyphenation should be conventional to The Concise Oxford English Dictionary. Statistics and measurements should at all times be given in figures, e.g. 16 min, except for when the number begins a sentence. When the number does not refer to a unit of measurement it should be spelt in full unless, it is 160 or greater.

Abbreviations supposed to be used carefully. The abbreviated name or expression is supposed to be cited in full at first usage, followed by the conventional abbreviation in parentheses.

Metric SI units are supposed to generally be used excluding where they conflict with current practice or are confusing. For illustration, 1.4 l rather than 1.4 × 10-3 m3, or 4 mm somewhat than 4 × 10-3 m. Chemical formula and solutions must identify the form used, e.g. anhydrous or hydrated, and the concentration must be in clearly defined units. Common species names should be followed by underlines at the first mention. For following use the generic name should be constricted to a single letter, if it is clear.

Structure

All manuscripts submitted to Global Journals Inc. (US), ought to include:

Title: The title page must carry an instructive title that reflects the content, a running title (less than 45 characters together with spaces), names of the authors and co-authors, and the place(s) wherever the work was carried out. The full postal address in addition with the e-mail address of related author must be given. Up to eleven keywords or very brief phrases have to be given to help data retrieval, mining and indexing.

Abstract, used in Original Papers and Reviews:

Optimizing Abstract for Search Engines

Many researchers searching for information online will use search engines such as Google, Yahoo or similar. By optimizing your paper for search engines, you will amplify the chance of someone finding it. This in turn will make it more likely to be viewed and/or cited in a further work. Global Journals Inc. (US) have compiled these guidelines to facilitate you to maximize the web-friendliness of the most public part of your paper.

Key Words

A major linchpin in research work for the writing research paper is the keyword search, which one will employ to find both library and Internet resources.

One must be persistent and creative in using keywords. An effective keyword search requires a strategy and planning a list of possible keywords and phrases to try.

Search engines for most searches, use Boolean searching, which is somewhat different from Internet searches. The Boolean search uses "operators," words (and, or, not, and near) that enable you to expand or narrow your affords. Tips for research paper while preparing research paper are very helpful guideline of research paper.

Choice of key words is first tool of tips to write research paper. Research paper writing is an art.A few tips for deciding as strategically as possible about keyword search:

- One should start brainstorming lists of possible keywords before even begin searching. Think about the most important concepts related to research work. Ask, "What words would a source have to include to be truly valuable in research paper?" Then consider synonyms for the important words.
- It may take the discovery of only one relevant paper to let steer in the right keyword direction because in most databases, the keywords under which a research paper is abstracted are listed with the paper.
- One should avoid outdated words.

Keywords are the key that opens a door to research work sources. Keyword searching is an art in which researcher's skills are bound to improve with experience and time.

Numerical Methods: Numerical methods used should be clear and, where appropriate, supported by references.

Acknowledgements: Please make these as concise as possible.

References

References follow the Harvard scheme of referencing. References in the text should cite the authors' names followed by the time of their publication, unless there are three or more authors when simply the first author's name is quoted followed by et al. unpublished work has to only be cited where necessary, and only in the text. Copies of references in press in other journals have to be supplied with submitted typescripts. It is necessary that all citations and references be carefully checked before submission, as mistakes or omissions will cause delays.

References to information on the World Wide Web can be given, but only if the information is available without charge to readers on an official site. Wikipedia and Similar websites are not allowed where anyone can change the information. Authors will be asked to make available electronic copies of the cited information for inclusion on the Global Journals Inc. (US) homepage at the judgment of the Editorial Board.

The Editorial Board and Global Journals Inc. (US) recommend that, citation of online-published papers and other material should be done via a DOI (digital object identifier). If an author cites anything, which does not have a DOI, they run the risk of the cited material not being noticeable.

The Editorial Board and Global Journals Inc. (US) recommend the use of a tool such as Reference Manager for reference management and formatting.

Tables, Figures and Figure Legends

Tables: Tables should be few in number, cautiously designed, uncrowned, and include only essential data. Each must have an Arabic number, e.g. Table 4, a self-explanatory caption and be on a separate sheet. Vertical lines should not be used.

Figures: Figures are supposed to be submitted as separate files. Always take in a citation in the text for each figure using Arabic numbers, e.g. Fig. 4. Artwork must be submitted online in electronic form by e-mailing them.

Preparation of Electronic Figures for Publication

Even though low quality images are sufficient for review purposes, print publication requires high quality images to prevent the final product being blurred or fuzzy. Submit (or e-mail) EPS (line art) or TIFF (halftone/photographs) files only. MS PowerPoint and Word Graphics are unsuitable for printed pictures. Do not use pixel-oriented software. Scans (TIFF only) should have a resolution of at least 350 dpi (halftone) or 700 to 1100 dpi (line drawings) in relation to the imitation size. Please give the data for figures in black and white or submit a Color Work Agreement Form. EPS files must be saved with fonts embedded (and with a TIFF preview, if possible).

For scanned images, the scanning resolution (at final image size) ought to be as follows to ensure good reproduction: line art: >650 dpi; halftones (including gel photographs) : >350 dpi; figures containing both halftone and line images: >650 dpi.

Color Charges: It is the rule of the Global Journals Inc. (US) for authors to pay the full cost for the reproduction of their color artwork. Hence, please note that, if there is color artwork in your manuscript when it is accepted for publication, we would require you to complete and return a color work agreement form before your paper can be published.

Figure Legends: Self-explanatory legends of all figures should be incorporated separately under the heading 'Legends to Figures'. In the full-text online edition of the journal, figure legends may possibly be truncated in abbreviated links to the full screen version. Therefore, the first 100 characters of any legend should notify the reader, about the key aspects of the figure.

6. AFTER ACCEPTANCE

Upon approval of a paper for publication, the manuscript will be forwarded to the dean, who is responsible for the publication of the Global Journals Inc. (US).

6.1 Proof Corrections

The corresponding author will receive an e-mail alert containing a link to a website or will be attached. A working e-mail address must therefore be provided for the related author.

Acrobat Reader will be required in order to read this file. This software can be downloaded

(Free of charge) from the following website:

www.adobe.com/products/acrobat/readstep2.html. This will facilitate the file to be opened, read on screen, and printed out in order for any corrections to be added. Further instructions will be sent with the proof.

Proofs must be returned to the dean at dean@globaljournals.org within three days of receipt.

As changes to proofs are costly, we inquire that you only correct typesetting errors. All illustrations are retained by the publisher. Please note that the authors are responsible for all statements made in their work, including changes made by the copy editor.

6.2 Early View of Global Journals Inc. (US) (Publication Prior to Print)

The Global Journals Inc. (US) are enclosed by our publishing's Early View service. Early View articles are complete full-text articles sent in advance of their publication. Early View articles are absolute and final. They have been completely reviewed, revised and edited for publication, and the authors' final corrections have been incorporated. Because they are in final form, no changes can be made after sending them. The nature of Early View articles means that they do not yet have volume, issue or page numbers, so Early View articles cannot be cited in the conventional way.

6.3 Author Services

Online production tracking is available for your article through Author Services. Author Services enables authors to track their article - once it has been accepted - through the production process to publication online and in print. Authors can check the status of their articles online and choose to receive automated e-mails at key stages of production. The authors will receive an e-mail with a unique link that enables them to register and have their article automatically added to the system. Please ensure that a complete e-mail address is provided when submitting the manuscript.

6.4 Author Material Archive Policy

Please note that if not specifically requested, publisher will dispose off hardcopy & electronic information submitted, after the two months of publication. If you require the return of any information submitted, please inform the Editorial Board or dean as soon as possible.

6.5 Offprint and Extra Copies

A PDF offprint of the online-published article will be provided free of charge to the related author, and may be distributed according to the Publisher's terms and conditions. Additional paper offprint may be ordered by emailing us at: editor@globaljournals.org .

Before start writing a good quality Computer Science Research Paper, let us first understand what is Computer Science Research Paper? So, Computer Science Research Paper is the paper which is written by professionals or scientists who are associated to Computer Science and Information Technology, or doing research study in these areas. If you are novel to this field then you can consult about this field from your supervisor or guide.

TECHNIQUES FOR WRITING A GOOD QUALITY RESEARCH PAPER:

1. Choosing the topic: In most cases, the topic is searched by the interest of author but it can be also suggested by the guides. You can have several topics and then you can judge that in which topic or subject you are finding yourself most comfortable. This can be done by asking several questions to yourself, like Will I be able to carry our search in this area? Will I find all necessary recourses to accomplish the search? Will I be able to find all information in this field area? If the answer of these types of questions will be "Yes" then you can choose that topic. In most of the cases, you may have to conduct the surveys and have to visit several places because this field is related to Computer Science and Information Technology. Also, you may have to do a lot of work to find all rise and falls regarding the various data of that subject. Sometimes, detailed information plays a vital role, instead of short information.

2. Evaluators are human: First thing to remember that evaluators are also human being. They are not only meant for rejecting a paper. They are here to evaluate your paper. So, present your Best.

3. Think Like Evaluators: If you are in a confusion or getting demotivated that your paper will be accepted by evaluators or not, then think and try to evaluate your paper like an Evaluator. Try to understand that what an evaluator wants in your research paper and automatically you will have your answer.

4. Make blueprints of paper: The outline is the plan or framework that will help you to arrange your thoughts. It will make your paper logical. But remember that all points of your outline must be related to the topic you have chosen.

5. Ask your Guides: If you are having any difficulty in your research, then do not hesitate to share your difficulty to your guide (if you have any). They will surely help you out and resolve your doubts. If you can't clarify what exactly you require for your work then ask the supervisor to help you with the alternative. He might also provide you the list of essential readings.

6. Use of computer is recommended: As you are doing research in the field of Computer Science, then this point is quite obvious.

7. Use right software: Always use good quality software packages. If you are not capable to judge good software then you can lose quality of your paper unknowingly. There are various software programs available to help you, which you can get through Internet.

8. Use the Internet for help: An excellent start for your paper can be by using the Google. It is an excellent search engine, where you can have your doubts resolved. You may also read some answers for the frequent question how to write my research paper or find model research paper. From the internet library you can download books. If you have all required books make important reading selecting and analyzing the specified information. Then put together research paper sketch out.

9. Use and get big pictures: Always use encyclopedias, Wikipedia to get pictures so that you can go into the depth.

10. Bookmarks are useful: When you read any book or magazine, you generally use bookmarks, right! It is a good habit, which helps to not to lose your continuity. You should always use bookmarks while searching on Internet also, which will make your search easier.

11. Revise what you wrote: When you write anything, always read it, summarize it and then finalize it.

12. Make all efforts: Make all efforts to mention what you are going to write in your paper. That means always have a good start. Try to mention everything in introduction, that what is the need of a particular research paper. Polish your work by good skill of writing and always give an evaluator, what he wants.

13. Have backups: When you are going to do any important thing like making research paper, you should always have backup copies of it either in your computer or in paper. This will help you to not to lose any of your important.

14. Produce good diagrams of your own: Always try to include good charts or diagrams in your paper to improve quality. Using several and unnecessary diagrams will degrade the quality of your paper by creating "hotchpotch." So always, try to make and include those diagrams, which are made by your own to improve readability and understandability of your paper.

15. Use of direct quotes: When you do research relevant to literature, history or current affairs then use of quotes become essential but if study is relevant to science then use of quotes is not preferable.

16. Use proper verb tense: Use proper verb tenses in your paper. Use past tense, to present those events that happened. Use present tense to indicate events that are going on. Use future tense to indicate future happening events. Use of improper and wrong tenses will confuse the evaluator. Avoid the sentences that are incomplete.

17. Never use online paper: If you are getting any paper on Internet, then never use it as your research paper because it might be possible that evaluator has already seen it or maybe it is outdated version.

18. Pick a good study spot: To do your research studies always try to pick a spot, which is quiet. Every spot is not for studies. Spot that suits you choose it and proceed further.

19. Know what you know: Always try to know, what you know by making objectives. Else, you will be confused and cannot achieve your target.

20. Use good quality grammar: Always use a good quality grammar and use words that will throw positive impact on evaluator. Use of good quality grammar does not mean to use tough words, that for each word the evaluator has to go through dictionary. Do not start sentence with a conjunction. Do not fragment sentences. Eliminate one-word sentences. Ignore passive voice. Do not ever use a big word when a diminutive one would suffice. Verbs have to be in agreement with their subjects. Prepositions are not expressions to finish sentences with. It is incorrect to ever divide an infinitive. Avoid clichés like the disease. Also, always shun irritating alliteration. Use language that is simple and straight forward. put together a neat summary.

21. Arrangement of information: Each section of the main body should start with an opening sentence and there should be a changeover at the end of the section. Give only valid and powerful arguments to your topic. You may also maintain your arguments with records.

22. Never start in last minute: Always start at right time and give enough time to research work. Leaving everything to the last minute will degrade your paper and spoil your work.

23. Multitasking in research is not good: Doing several things at the same time proves bad habit in case of research activity. Research is an area, where everything has a particular time slot. Divide your research work in parts and do particular part in particular time slot.

24. Never copy others' work: Never copy others' work and give it your name because if evaluator has seen it anywhere you will be in trouble.

25. Take proper rest and food: No matter how many hours you spend for your research activity, if you are not taking care of your health then all your efforts will be in vain. For a quality research, study is must, and this can be done by taking proper rest and food.

26. Go for seminars: Attend seminars if the topic is relevant to your research area. Utilize all your resources.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

27. Refresh your mind after intervals: Try to give rest to your mind by listening to soft music or by sleeping in intervals. This will also improve your memory.

28. Make colleagues: Always try to make colleagues. No matter how sharper or intelligent you are, if you make colleagues you can have several ideas, which will be helpful for your research.

29. Think technically: Always think technically. If anything happens, then search its reasons, its benefits, and demerits.

30. Think and then print: When you will go to print your paper, notice that tables are not be split, headings are not detached from their descriptions, and page sequence is maintained.

31. Adding unnecessary information: Do not add unnecessary information, like, I have used MS Excel to draw graph. Do not add irrelevant and inappropriate material. These all will create superfluous. Foreign terminology and phrases are not apropos. One should NEVER take a broad view. Analogy in script is like feathers on a snake. Not at all use a large word when a very small one would be sufficient. Use words properly, regardless of how others use them. Remove quotations. Puns are for kids, not grunt readers. Amplification is a billion times of inferior quality than sarcasm.

32. Never oversimplify everything: To add material in your research paper, never go for oversimplification. This will definitely irritate the evaluator. Be more or less specific. Also too, by no means, ever use rhythmic redundancies. Contractions aren't essential and shouldn't be there used. Comparisons are as terrible as clichés. Give up ampersands and abbreviations, and so on. Remove commas, that are, not necessary. Parenthetical words however should be together with this in commas. Understatement is all the time the complete best way to put onward earth-shaking thoughts. Give a detailed literary review.

33. Report concluded results: Use concluded results. From raw data, filter the results and then conclude your studies based on measurements and observations taken. Significant figures and appropriate number of decimal places should be used. Parenthetical remarks are prohibitive. Proofread carefully at final stage. In the end give outline to your arguments. Spot out perspectives of further study of this subject. Justify your conclusion by at the bottom of them with sufficient justifications and examples.

34. After conclusion: Once you have concluded your research, the next most important step is to present your findings. Presentation is extremely important as it is the definite medium though which your research is going to be in print to the rest of the crowd. Care should be taken to categorize your thoughts well and present them in a logical and neat manner. A good quality research paper format is essential because it serves to highlight your research paper and bring to light all necessary aspects in your research.

Informal Guidelines of Research Paper Writing

Key points to remember:

- Submit all work in its final form.
- Write your paper in the form, which is presented in the guidelines using the template.
- Please note the criterion for grading the final paper by peer-reviewers.

Final Points:

A purpose of organizing a research paper is to let people to interpret your effort selectively. The journal requires the following sections, submitted in the order listed, each section to start on a new page.

The introduction will be compiled from reference matter and will reflect the design processes or outline of basis that direct you to make study. As you will carry out the process of study, the method and process section will be constructed as like that. The result segment will show related statistics in nearly sequential order and will direct the reviewers next to the similar intellectual paths throughout the data that you took to carry out your study. The discussion section will provide understanding of the data and projections as to the implication of the results. The use of good quality references all through the paper will give the effort trustworthiness by representing an alertness of prior workings.

Writing a research paper is not an easy job no matter how trouble-free the actual research or concept. Practice, excellent preparation, and controlled record keeping are the only means to make straightforward the progression.

General style:

Specific editorial column necessities for compliance of a manuscript will always take over from directions in these general guidelines.

To make a paper clear

· Adhere to recommended page limits

Mistakes to evade

- Insertion a title at the foot of a page with the subsequent text on the next page
- Separating a table/chart or figure - impound each figure/table to a single page
- Submitting a manuscript with pages out of sequence

In every sections of your document

· Use standard writing style including articles ("a", "the," etc.)

· Keep on paying attention on the research topic of the paper

· Use paragraphs to split each significant point (excluding for the abstract)

· Align the primary line of each section

· Present your points in sound order

· Use present tense to report well accepted

· Use past tense to describe specific results

· Shun familiar wording, don't address the reviewer directly, and don't use slang, slang language, or superlatives

· Shun use of extra pictures - include only those figures essential to presenting results

Title Page:

Choose a revealing title. It should be short. It should not have non-standard acronyms or abbreviations. It should not exceed two printed lines. It should include the name(s) and address (es) of all authors.

Abstract:

The summary should be two hundred words or less. It should briefly and clearly explain the key findings reported in the manuscript--must have precise statistics. It should not have abnormal acronyms or abbreviations. It should be logical in itself. Shun citing references at this point.

An abstract is a brief distinct paragraph summary of finished work or work in development. In a minute or less a reviewer can be taught the foundation behind the study, common approach to the problem, relevant results, and significant conclusions or new questions.

Write your summary when your paper is completed because how can you write the summary of anything which is not yet written? Wealth of terminology is very essential in abstract. Yet, use comprehensive sentences and do not let go readability for briefness. You can maintain it succinct by phrasing sentences so that they provide more than lone rationale. The author can at this moment go straight to shortening the outcome. Sum up the study, with the subsequent elements in any summary. Try to maintain the initial two items to no more than one ruling each.

- Reason of the study - theory, overall issue, purpose
- Fundamental goal
- To the point depiction of the research
- Consequences, including definite statistics - if the consequences are quantitative in nature, account quantitative data; results of any numerical analysis should be reported
- Significant conclusions or questions that track from the research(es)

Approach:

- Single section, and succinct
- As a outline of job done, it is always written in past tense
- A conceptual should situate on its own, and not submit to any other part of the paper such as a form or table
- Center on shortening results - bound background information to a verdict or two, if completely necessary
- What you account in an conceptual must be regular with what you reported in the manuscript
- Exact spelling, clearness of sentences and phrases, and appropriate reporting of quantities (proper units, important statistics) are just as significant in an abstract as they are anywhere else

Introduction:

The **Introduction** should "introduce" the manuscript. The reviewer should be presented with sufficient background information to be capable to comprehend and calculate the purpose of your study without having to submit to other works. The basis for the study should be offered. Give most important references but shun difficult to make a comprehensive appraisal of the topic. In the introduction, describe the problem visibly. If the problem is not acknowledged in a logical, reasonable way, the reviewer will have no attention in your result. Speak in common terms about techniques used to explain the problem, if needed, but do not present any particulars about the protocols here. Following approach can create a valuable beginning:

- Explain the value (significance) of the study
- Shield the model - why did you employ this particular system or method? What is its compensation? You strength remark on its appropriateness from a abstract point of vision as well as point out sensible reasons for using it.
- Present a justification. Status your particular theory (es) or aim(s), and describe the logic that led you to choose them.
- Very for a short time explain the tentative propose and how it skilled the declared objectives.

Approach:

- Use past tense except for when referring to recognized facts. After all, the manuscript will be submitted after the entire job is done.
- Sort out your thoughts; manufacture one key point with every section. If you make the four points listed above, you will need a least of four paragraphs.

- Present surroundings information only as desirable in order hold up a situation. The reviewer does not desire to read the whole thing you know about a topic.
- Shape the theory/purpose specifically - do not take a broad view.
- As always, give awareness to spelling, simplicity and correctness of sentences and phrases.

Procedures (Methods and Materials):

This part is supposed to be the easiest to carve if you have good skills. A sound written Procedures segment allows a capable scientist to replacement your results. Present precise information about your supplies. The suppliers and clarity of reagents can be helpful bits of information. Present methods in sequential order but linked methodologies can be grouped as a segment. Be concise when relating the protocols. Attempt for the least amount of information that would permit another capable scientist to spare your outcome but be cautious that vital information is integrated. The use of subheadings is suggested and ought to be synchronized with the results section. When a technique is used that has been well described in another object, mention the specific item describing a way but draw the basic principle while stating the situation. The purpose is to text all particular resources and broad procedures, so that another person may use some or all of the methods in one more study or referee the scientific value of your work. It is not to be a step by step report of the whole thing you did, nor is a methods section a set of orders.

Materials:

- Explain materials individually only if the study is so complex that it saves liberty this way.
- Embrace particular materials, and any tools or provisions that are not frequently found in laboratories.
- Do not take in frequently found.
- If use of a definite type of tools.
- Materials may be reported in a part section or else they may be recognized along with your measures.

Methods:

- Report the method (not particulars of each process that engaged the same methodology)
- Describe the method entirely
- To be succinct, present methods under headings dedicated to specific dealings or groups of measures
- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
- If well known procedures were used, account the procedure by name, possibly with reference, and that's all.

Approach:

- It is embarrassed or not possible to use vigorous voice when documenting methods with no using first person, which would focus the reviewer's interest on the researcher rather than the job. As a result when script up the methods most authors use third person passive voice.
- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

What to keep away from

- Resources and methods are not a set of information.
- Skip all descriptive information and surroundings - save it for the argument.
- Leave out information that is immaterial to a third party.

Results:

The principle of a results segment is to present and demonstrate your conclusion. Create this part a entirely objective details of the outcome, and save all understanding for the discussion.

The page length of this segment is set by the sum and types of data to be reported. Carry on to be to the point, by means of statistics and tables, if suitable, to present consequences most efficiently.You must obviously differentiate material that would usually be incorporated in a study editorial from any unprocessed data or additional appendix matter that would not be available. In fact, such matter should not be submitted at all except requested by the instructor.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

Content

- Sum up your conclusion in text and demonstrate them, if suitable, with figures and tables.
- In manuscript, explain each of your consequences, point the reader to remarks that are most appropriate.
- Present a background, such as by describing the question that was addressed by creation an exacting study.
- Explain results of control experiments and comprise remarks that are not accessible in a prescribed figure or table, if appropriate.
- Examine your data, then prepare the analyzed (transformed) data in the form of a figure (graph), table, or in manuscript form.

What to stay away from

- Do not discuss or infer your outcome, report surroundings information, or try to explain anything.
- Not at all, take in raw data or intermediate calculations in a research manuscript.
- Do not present the similar data more than once.
- Manuscript should complement any figures or tables, not duplicate the identical information.
- Never confuse figures with tables - there is a difference.

Approach

- As forever, use past tense when you submit to your results, and put the whole thing in a reasonable order.
- Put figures and tables, appropriately numbered, in order at the end of the report
- If you desire, you may place your figures and tables properly within the text of your results part.

Figures and tables

- If you put figures and tables at the end of the details, make certain that they are visibly distinguished from any attach appendix materials, such as raw facts
- Despite of position, each figure must be numbered one after the other and complete with subtitle
- In spite of position, each table must be titled, numbered one after the other and complete with heading
- All figure and table must be adequately complete that it could situate on its own, divide from text

Discussion:

The Discussion is expected the trickiest segment to write and describe. A lot of papers submitted for journal are discarded based on problems with the Discussion. There is no head of state for how long a argument should be. Position your understanding of the outcome visibly to lead the reviewer through your conclusions, and then finish the paper with a summing up of the implication of the study. The purpose here is to offer an understanding of your results and hold up for all of your conclusions, using facts from your research and generally accepted information, if suitable. The implication of result should be visibly described. Infer your data in the conversation in suitable depth. This means that when you clarify an observable fact you must explain mechanisms that may account for the observation. If your results vary from your prospect, make clear why that may have happened. If your results agree, then explain the theory that the proof supported. It is never suitable to just state that the data approved with prospect, and let it drop at that.

- Make a decision if each premise is supported, discarded, or if you cannot make a conclusion with assurance. Do not just dismiss a study or part of a study as "uncertain."
- Research papers are not acknowledged if the work is imperfect. Draw what conclusions you can based upon the results that you have, and take care of the study as a finished work
- You may propose future guidelines, such as how the experiment might be personalized to accomplish a new idea.
- Give details all of your remarks as much as possible, focus on mechanisms.
- Make a decision if the tentative design sufficiently addressed the theory, and whether or not it was correctly restricted.
- Try to present substitute explanations if sensible alternatives be present.
- One research will not counter an overall question, so maintain the large picture in mind, where do you go next? The best studies unlock new avenues of study. What questions remain?
- Recommendations for detailed papers will offer supplementary suggestions.

Approach:

- When you refer to information, differentiate data generated by your own studies from available information
- Submit to work done by specific persons (including you) in past tense.
- Submit to generally acknowledged facts and main beliefs in present tense.

Please carefully note down following rules and regulation before submitting your Research Paper to Global Journals Inc. (US):

Segment Draft and Final Research Paper: You have to strictly follow the template of research paper. If it is not done your paper may get rejected.

- The **major constraint** is that you must independently make all content, tables, graphs, and facts that are offered in the paper. You must write each part of the paper wholly on your own. The Peer-reviewers need to identify your own perceptive of the concepts in your own terms. NEVER extract straight from any foundation, and never rephrase someone else's analysis.

- Do not give permission to anyone else to "PROOFREAD" your manuscript.

- Methods to avoid Plagiarism is applied by us on every paper, if found guilty, you will be blacklisted by all of our collaborated research groups, your institution will be informed for this and strict legal actions will be taken immediately.)
- To guard yourself and others from possible illegal use please do not permit anyone right to use to your paper and files.

© Copyright by Global Journals Inc.(US)| Guidelines Handbook

Criterion for Grading a Research Paper (Compilation) by Global Journals Inc. (US)

Please note that following table is only a Grading of "Paper Compilation" and not on "Performed/Stated Research" whose grading solely depends on Individual Assigned Peer Reviewer and Editorial Board Member. These can be available only on request and after decision of Paper. This report will be the property of Global Journals Inc. (US).

Topics	Grades		
	A-B	**C-D**	**E-F**
Abstract	Clear and concise with appropriate content, Correct format. 200 words or below	Unclear summary and no specific data, Incorrect form Above 200 words	No specific data with ambiguous information Above 250 words
Introduction	Containing all background details with clear goal and appropriate details, flow specification, no grammar and spelling mistake, well organized sentence and paragraph, reference cited	Unclear and confusing data, appropriate format, grammar and spelling errors with unorganized matter	Out of place depth and content, hazy format
Methods and Procedures	Clear and to the point with well arranged paragraph, precision and accuracy of facts and figures, well organized subheads	Difficult to comprehend with embarrassed text, too much explanation but completed	Incorrect and unorganized structure with hazy meaning
Result	Well organized, Clear and specific, Correct units with precision, correct data, well structuring of paragraph, no grammar and spelling mistake	Complete and embarrassed text, difficult to comprehend	Irregular format with wrong facts and figures
Discussion	Well organized, meaningful specification, sound conclusion, logical and concise explanation, highly structured paragraph reference cited	Wordy, unclear conclusion, spurious	Conclusion is not cited, unorganized, difficult to comprehend
References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

INDEX

A

Angiomyolipoma · 11, 12, 13

C

Choecystectomy · 49
Cholangiography · 49, 51

E

Erythematous · 30

F

Fistulectomy · 55, 58, 59, 61

H

Haemodynamically · 10, 13
Hyaluronidase · 28, 29
Hypercholesterolemia · 3
Hyperleucocytosis · 49

L

Laparoscopic · 41, 42, 43, 45, 47, 48, 51, 52, 53

M

Musculoaponeurotic · 37

O

Ophthalmoscopy · 18, 19

P

Parenchyma · 6, 12
Phacoemulsification · 17, 29
Pneumothorax · 30

R

Rhytidectomies · 39

S

Sphincteroplasty · 55, 59, 61
Staphylococcus · 33

T

Tachycardiac · 1
Thrombophlebitis · 30, 32, 33, 34
Thromboprophylaxis · 34
Transsphincteric · 55, 59, 61
Triglycerides · 3
Tylenol · 1

V

Varicocelectomy · 47, 48

Z

Zygomatic · 37, 38

save our planet

Global Journal of Medical Research

Visit us on the Web at www.GlobalJournals.org | www.JournalofScience.org
or email us at helpdesk@globaljournals.org

ISSN 9755896

© Global Journals