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

Global Journal

of Medical Research: I

Surgeries and Cardiovascular System

Renal Cell Carcinoma

Penile Anomalous Anatomy

Highlights

Soft Tissue Sarcoma

Atrioventricular Nodal Reentry

Discovering Thoughts, Inventing Future

VOLUME 13 ISSUE 2 VERSION 1.0

Global Journal of Medical Research: I
Surgeries and Cardiovascular System

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Volume 13 Issue 2 (Ver. 1.0)

Open Association of Research Society

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

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Publisher's Headquarters office

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USA Toll Free Fax: +001-888-839-7392

Offset Typesetting

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200 USD (B/W) & 250 USD (Color)

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Contents of the Volume

Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

Pattern and Presentation of Renal Cell Carcinoma Ingezira Hospital for Renal Diseases and Surgery

By SalihYahia Mohammed, Mustafa Omran Mansour
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Abstract - Background: Renal cell carcinoma (RCC) is most commonprimary tumour of kidney in adult, responsible for (80-85%) of renal tumour[1]. Due to ultimately absence of studies in Sudan in assessing the pattern and presentation of RCC, we conducted this study in Gezira Hospital for renal diseases and Surgery, in period from January 2006- January 2012.

Objective: To determine the clinical presentation, pathological pattern and stages of RCC in patients who treated in (GHRS).

Results: A total of 60 patients were diagnosed to have RCC in duration of 5 years. The disease is more common in male, with peak incidence in the fifth and sixth decades. Incidentally diagnosed are 6 patients. Classical triad observed in 19patients .Mean duration of symptoms was 4 months. Some patients had metastasis in the lung, bones or liver when diagnosed. Most of the patients presented with loin mass, small number with cervical lymphadenopathy, lower limb edema or non reduciblevaricocele

GJMR-I Classification : NLMC Code: WD 205, WG 168

Strictly as per the compliance and regulations of:

Pattern and Presentation of Renal Cell Carcinoma Ingezira Hospital for Renal Diseases and Surgery

SalihYahia Mohammed [α], Mustafa Omran Mansour [σ] & Mohammed Elemam Mohammed Ahmed [ρ]

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Conclusion: Large number of patients presented with palpable loin mass, in contrast incidentally diagnosed are fewer. The age of presentation is one decade earlier than western world.

I. Introduction

Renal cell carcinomas (RCCs) are the commonest primary renal tumour in adult responsible for 80 - 85 % of tumours, followed by transitional cell carcinoma (TCC). This tumour is relatively rare in paediatric where it replaced by Wilmstumour.[(1)]

Globally, the incidence of RCC varies widely from region to region with the highest rates observed in the Czech Republic and North America [(1)]

The incidence of RCC has been increased over last decades, and the size of mass decreased at diagnosis and so the stage, with proportional increases in 5years survival rate. This may be attributed to wide use of new imaging techniques and incidental diagnosis which approached more than (50%) along with early surgical intervention.

There are number of environmental and clinical factors have been implicated in the aetiology of RCC. [(2,3)] These including hypertension, acquired cystic disease of the kidney (typically associated with dialysis), obesity, hepatitis C, smoking, occupational exposure to toxic compounds such as cadmium and asbestos, analgesic abuse nephropathy. Genetic abnormalities as Von Hippel-Lindaugene, which found in 50-60% of cases, deletion of chromosome 3p and mutations in the p53 gene had been implicated. [(2,4,5,6,7)]

Previously, RCCs were classified by cell type and growth pattern[(8)] This classification has recently changed to more accurately reflect the morphology, growth pattern, cell of origin, histochemical, and molecular basis of the different types of adeno-carcinomas.[(9,10)].Several distinct subtypes of RCC have been identified, including: Clear cell (75 to 85 %), which typically have a deletion of chromosome 3p, arise from the proximal tubule.[(11)] In addition to occurring in sporadic disease, clear cell carcinomas are specifically associated with von Hippel-Lindau disease. Papillary (chromophilic) (10 to 15%) are frequently multifocal and bilateral, and commonly present as small, early stage tumours, Chromophobe (5 to 10%), Oncocytic (uncommon), Collecting duct (Bellini's duct) very rare, and less than 5 % of RCCs are considered unclassified, these tumours had a worse prognosis compared with clear cell cancers [(12,13)]

Symptoms associated with RCC can be due to local tumour growth, haemorrhage, paraneoplastic syndromes, or metastatic disease.[(14)] With the more pervasive use of non-invasive imaging for the evaluation of nonspecific symptom, more than 50% of RCCs are now detected incidentally.[(15-16)] The classic trait of flank pain, heamaturia and abdominal mass presented in about 10 – 15 % of patient and indicate an advance disease (too late trait). Before the advent of ultrasonography and CT, most patients with RCC presented with one or more of these signs or symptoms, and many were incurable. Other indicators of advanced disease include constitutional symptoms, such as weight loss, fever, and night sweats, and physical

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Examination findings such as palpable cervical lymphadenopathy, non reducing varicocele, or bilateral lower extremity oedema due to venous involvement. A minority of patients present with symptoms directly rela-ted to metastatic disease. Paraneoplastic syndromes are found in 20% of patients, like hyper-tension, nonmetastatic hepatic dysfunction, hyper-calcaemia, Cushing syndrome, polycythaemia, hypog-lycaemia, and other hormones related disorders.

II. Patients and Methods

This is a retrospective and prospective, descriptive, cross sectional and hospital based study. was conducted in Gezira Hospital for Renal Diseases and Surgery in Wad Madani the second city in Sudan, which is a governmental class (A) hospital. It is tertiary hospital provide service to population of Gezira and neighbouring states. The hospital offers 24 hours emegency, laboratory, blood bank and pharmacy services. All patients with renal cell carcinoma diagnosed and managed in the hospital during the period from January. 2006- January 2012, and agreed to participate were enrolled in the study.

The sample size was 60 patients; data collected by detailed and structured questionnaire is to be filled directly by the patients. Most patients assessed by author. Data analyzed by computer using statistical package for social science (SPSS) software (v:17).

III. Results

Data analysis of sixty patient was done, male were 36(60%) and female were 24 (40%), male to female ratio was 3:2,majority of patients were aged above 50year (81%), and 61% of them reside central area (Gezira and Khartoum states).

About 75 % of patients have duration of more than one month when presented first time. Asymptomatic patient are few (6 patients) (10%) , but more than half of patient have lion mass when presented first time 34 (57 %),the classical triad of (Hematuria, lion pain loin mass)occurred in about 31.6 % details shown in (table 1). More than half of the patients (57%) their physical examination revealed palpable lion mass. Few patients had palpable cervical lymph node (6.7%)non reducible varicocele (5%) or lower limb oedema (3.3%).

All patients had abdominal ultrasound as initial imaging of the mass followed by enhance CT scan; only four patients underwent MRI to assess the vascular system and bones. Chest X ray was the tool four lung and chest wall metastases, was done in all patients.

Two third of the patients 40(66.7%) had clear cell type representing the most common type.

About 15 % is papillary type, fewer are chromophope (10%) and collecting duct (5%), two cases were unclassified.

Early disease stages were constituted about 40% (stage I ten and II fourteen), the rest 60% were advanced stages (III twenty and IV sixteen).

Table 1 : Clinical Presentation

Clinical Presentation		NO	%
Durationweeks		6	10
	Months	45	75
	Years	9	15
Presentation asymptomatic		6	10
Haematuria		40	66.6
	Loin pain	39	65
	Loin mass	34	57
	Classical triad	9	15
Conistutionalpyrexia		8	30
	Weight loss	27	45
	Anaemia	16	26.7
ParaneoplasticAbnormalLFT		17	28.3
	Hyper Calcaemia	1	1.6
Metastatic symptoms Lungs		3	5
	Bones	2	3.3
	Liver	4	6.7

Table 2 : Physical Examination

Examination	No	%
Palpable lion mass	34	7
Palpable cervical lymph node	4	6.7
Bilateral Lower limb edema	2	3.3
Non reducible varicocele	3	5

Table 3 : Histopathological Types

Type	NO	%
Clear cell	40	66.7
Papillary (chromophilic)	9	15
Chromophopes	6	10
Collecting duct	3	5
Unclassified	2	3.3

Table 4 : Staging

Stage	NO	%
Stage i	10	16.7
Stage ii	14	23.3
Stage iii	20	33.3
Stage iv	16	28.7

IV. Discussion

This study is prospective, descriptive, cross sectional and hospital based study. The data analysis was done, and due to lack of local studies in pattern and presentation of RCC in Sudan we had being obligated to compare the results with available regional and international studies. The analysis of patient's demographic feature showed that; the distribution between sexes is keeping with international one, 2:3 for female: male respectively. Some regional study in Nigeria showed female predominance with male to female ratio of 1:1.7.[17] Most of the cases in this review were above age 50years, and the peak incidence between the fifth and sixth decades of life (46.7%), which is one decade earlier than western world population where RCC is primary a disease of elderly with typical presentation in sixth and seventh decades. [15,16] The similar to our finding was reported in Nepal. [18] Mean age at time of diagnosis was (58.3 years) which near to what was found in Nepal, which was (55year), and this was similar to the findings of choi et al and Pradhan et al.

In contrast mean age at Lagos and Obafemi hospitals was 41.8 years and 47.5 years respectively. The majority of RCC does not become symptomatic until advanced disease develops, due to the retroperitoneal location of the kidney. Local symptoms arise only after tumor achieved adequate size to displace or invade other organs [19].

In this study common presenting symptoms were hematuria (66.7%) loin pain (48.3%) and loin mass (57.3%). Occurrence of the first two is more common in female and quite similar to the international one [19] , but presence of loin mass is more in male and it is higher than international figures, this indicates that male patients do not seek medical advice until the mass dragged their attention. The rate of current symptoms is reversed when compared with Lagos study; hematuria (40.6%), loin pain (86%) and palpable loin mass (90.6%). The classical triad appeared in one fourth of the patients 31.6 %, it's higher than international reports 7-10%, but similar to what reported in Nigeria (29- 36%).

In this review some patients presented with constitutional symptoms such as; pyrexia, weight loss and anaemia, their rates matching international. [15,17,20] Constitutional symptoms have a great correlation with disease duration and stage. paraeneoplastic syndrome was observed in (33.3%) , and this result is comparable with international studies (20-40%). Distal metastases symptoms were found at time of diagnosis, surprisingly two third of them were male.

Concerning physical examination of the patients studied in this review more than half of them (57%) presented with palpable loin mass, this is occur in one third of patients in western world [20] ,this due to late presentation in our community . Other signs appeared Low frequency such as palpable cervical lymphadenopathy (6.7%), limb oedema and varicocele; all are keeping with international and regional reports [15,17]

All patients in this study had abdominal ultrasound as initial imaging, which found to be very useful in diagnosing renal mass. CT scan done in all case also, it is the method of choice in staging of tumour and more sensitive than sonogarphy. It looks clear that when patient directed into right referral tract the diagnosis will be obvious. MRI as additional imaging

to CT has been done in four cases, it more sensitive in assessing the vessels and bone lesions but had no other benefits over CT scan.

Regarding the histopathological patterns all these percentages are similar to the international ones.[1018,19] but in Nigeria incidence of clear cell type was low as 33.3%[20] .The stage of disease in this study keeping with regional series where African people presented and diagnosed late, 60% had locallyadvance or metastatic disease. [17,18] In contrast to international studies where the rule is early stages and increasing incidence of patients are incidentally diagnosed. [15,16,19]

V. Conclusion

RCCoccurred one decade earlier than western population. Highest incidence in the fifth and sixth decades. Large number of patients presented with classical triad, most of them weremale. Incidentally diagnosed were fewer patients, two third of them were female. The commonest pathological type was clear cell.

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Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

Evaluation of the Impact of Penile Anomalous Anatomy on the Surgical Management of Hypospadias in Gezira National Centre for Paediatrics Surgery

By Ammar Abdelhameed Ahmed Elsharif, Faisal Abdelgalyl Nugud & Osman Taha Mohamed Osman

University of Gezira, Sudan

Abstract - Introduction: The fact that there are over 250 methods of surgical correction of hypospadias described in the literature indicates that the "hypospadiologists" are still in search of the ideal technique for repair.

Objectives: To evaluate the impact of penile anatomy on the surgical management of hypospadias.

Results: Fourty four patients with different types of hypospadias 88.6% presented more than one year and 11.4% less .we found that 11.4% had glandular meatus,43.2% distal and 45.4% proximal ,also 43.2% had no chordee,45.4% had superficial and 11.4% deep chordee, meatal site after chordee correction24% distal , 60 % proximal and 16% penoscrotal.

Keywords : *penile hypospadias, penile anomalous, surgical repair, outcome*

GJMR-I Classification : *NLMC Code: WO 101*

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Evaluation of the Impact of Penile Anomalous Anatomy on the Surgical Management of Hypospadias in Gezira National Centre for Paediatrics Surgery

Ammar Abdelhameed Ahmed Elsharif [α], Faisal Abdelgalyl Nugud [σ] & Osman Taha Mohamed Osman [ρ]

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The most common operation performed was Denis Browne procedure 36.4%, followed by TIP 27.2%, then mucosal onlay flap 11.4%, Mathieu and MAGPI 9.1%, GAP and mucosal graft, MIV and onlyflap 2.3%. The site of meatus post operatively glandular43.2%, proximal 22.8% and 34% distal meatus.
The most common complication was wound infection 16%, fistula 9.1% and stenosis 2.3%

In conclusion: Hopspadias remains challenges to surgeon, it is importance to detail the penile amatomy in order to select the appropriate surgical procedure.

Keywords : penile hypospadias, penile anomalous, surgical repair, outcome.

I. Background

Hypospadias is one of the most common congenital anomalies defined by abortive development of the urethral spongiosum, the ventral prepuce and in more severe cases penile chordee. The incidence of hypospadias is 1 in 200 to 300 boys are affected.{1}

The etiology of hypospadias remains unknown with environmental exposure in the form of endocrine disruptors, {2} the fact that there are over 250 methods of surgical correction of hypospadias described in the literature indicates that the "hypospadiologists" are still in search of the ideal technique. {3}

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II. Objectives

To evaluate the impact of penile anatomy on the surgical management of hypospadias in Gezira National Centre for Pediatric Surgery (GNCPS), to determine the age at presentation, surgical outcome, detail the description of the penile anatomy in hypospedic patient, define the most suitable surgical operation and asses intraoperative and post operative complication.

III. Patient and Methods

This study was conducted in GNCPS, Fourty four hypospadic patients were seen, operated. Data collected by structure questionnaire for each patient, after informed consent from the parent.

IV. Results

Fourty four patients with different types of hypospadias 88.6% presented more than one year, and 11.4% less than one year. .we found that 11.4% had glandular meatus, 43.2% distal and 45.4% proximal, also 43.2% had no chordee, 45.4% had superficial and 11.4% deep chordee, meatal site after chordee correction 24% distal, 60 % proximal and 16% penoscrotal. We found that 11.4% had intact complete prepuce, the rest of them had incomplete prepuce 88.6 %.

When assessing the anatomy of glans; in 59.1% of cases was found to be cleft, in 38.6% incomplete cleft and just in one case was flat 2.3%. In this study the width of urethral plate is more than 1cm in 43.2% and in 56.8% of pts were less than 1cm and no pts seen with penoscrotal transpotion or penile torsion

The most common operation performed was Denis Browne procedure 36.4%, followed by TIP27.2%, then mucosal onlay flap 11.4%, Mathieu and MAGPI 9.1%, GAP and mucosal graft, MIV and only flap 2.3%. The site of meatus post operatively became glandular in 43.2%, 34% distal meatus and proximal 22.8%.

The most common complication was wound infection 16%, fistula 9.1% and stenosis 2.3%.

V. Discussion

This prospective study for one year period Feb2012—Feb 2013 in GNCPS aims to evaluated the importance of detailing the penile anatomy on selecting the appropriate surgical procedure.

The study revealed that; the age at presentation is more than one year in 39 patients (88.6%). This figure is well above the recommended age for repair worldwide. The American Academy of Pediatrics recommendation is to perform hypospadias repair at age 6 to 12 months.{4} Only 5 patients (11.4%) were seen within the recommended period. This reflects lack of community awareness. In a retrospective series of 693 patients with primary hypospadias repair Marrocco et al observed an increased number of complications in those older than 1 year compared to patients younger than 1 year.{5}

The distally situated hypospadias represented the majority of patients seen and operated on (54.6%). The figure is slightly lower than literature reports which is 70–80% for distal-(anterior) hypospadias, and 15–20% for midshaft hypospadias.{3}

The overall incidence of chordee in the studied group is 55.8%.This is alittle pit low comparing with incidence reported by Hisham et al from Cario university ; The overall incidence of chordee (71%) and Abdelrahman in Alribat.H which is 88%.{6-7}

With regard to operative plan ,the patients underwent single or two stage ; according to their urethral meatus site, the presence of chordee ,tissue quality & urethral plate width, The patients are categories as 43.2% single stage , two stage 54.5% and 2.3% other ,as we found in literature severe hypospadias need to be staged . The second stage is performed at least 6 months after the first stage. To facilitate the urethroplasty within the glans, during the first stage, dorsal skin is tucked within the glans wings.{3}

The most common operation performed was Denis Browne (N=16) 36.4%, followed by TIP (12) 27.2%, then mucosal onlay flap (N=5) 11.4% and MAGPI and Mathieu (N=4) 9.1% for each and mucosal graft, MIV and GAP procedure (N=1) 2.3% for each.

The overall complication regardless the operation done as flow fistula in Four patients (9.1%), this acceptable when compared to study in Alribat. M.H published in 20011, with fistula rate was 14%.{7}

In a retrospective review of 31 patients who underwent initial hypospadias repair after age 10 years Dodson et al reported complications, including fistula in 32%. Snodgrass mentioned that the most common problem following TIP was fistula, TIP repairs he also used single layer tubularization and a dartos barrier flap but observed a 33% incidence of fistulas, which diminished to 10% using 2-layer sub epithelial closure and using tunica vaginalis, fistula occurred in (14%). {8}

Warren T. Snodgrass in series, A total of 551 consecutive patients underwent distal hypospadias repair. All were corrected by UP tubularization, complication was 4%.{9}

The short period of the follow up in our series in compering to that mentioned in compering study ,Ali Ziada, Amgad Hamza, Mohammed Abdel-Rassoul, Enmar Habib, Ahmad Mohamed and Mahmoud Daw report (9.8%) postoperative complications in 61 cases review in Cairo university with mean follow up period of 26 months.{4} In our study meatal stenosis occurred in one patients 2.3%,which is comparable to Hisham A. El Saket from *Egypt and to* Warrant.Snodgross in a summary of published results in 328 patients in 1999, meatal stenosis developed in (1.5%) .{6}

VI. In Conclusion

Hopspadias remains challenges to surgeon, it is importance to detail the penile anatomy in order to select the appropriate surgical procedure. We have good surgical out come and rate of complication, despite the elder age at presentation.

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Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

Soft Tissue Sarcoma (STS) in Gezira Sudan Presentation, Management and Outcome

By Sufian Osman, Ahmad Alamin, Ahmed Alhaj & Ahmed Kamal A. Salih
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Abstract - Objective: The aim of this study is to evaluate the management of soft tissue sarcoma (STS) in Medani teaching hospital & oncology hospital. In aspect of clinical presentation, surgical procedure, use of adjuvant therapy and the outcome of management.

Methods: This is a retrospective descriptive study that has been reviewing a 55 patient with soft tissue sarcoma presented to the hospital during the period from January 2010 to August 2012.

Results: the mean age is 51 years. The peak age range was 40–60 years, with the most common site affected by soft tissue sarcoma is the lower limbs (43.6%) and common size of presentation more than 15 cm in the greatest dimension (47.3%). (36.4%) of patients presented with past history of excision. MRI and U/S stand as the most common imaging requested (29.1%) and (30.6%) respectively. Excisional biopsy done for the majority of patients (58.2%) in which most of them has clear margin (56.4%) .

GJMR-I Classification : WE 706, QZ 345

Strictly as per the compliance and regulations of:

Soft Tissue Sarcoma (STS) in Gezira Sudan Presentation, Management and Outcome

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Conclusion: The late presentation of the tumors as reflected by huge size at first presentation making the management a real challenge. Soft tissue sarcoma found to be common in our community and causing big problem in its treatment because of its high rate recurrence and delayed presentation.

I. Introduction and Literature Review

Soft tissue sarcoma refers to a sarcoma that arises from the non-bony tissues of the extremity, pelvis or trunk. These tumors can arise directly from the muscles or from the other soft tissues between the muscles. They can also arise from the skin and subcutaneous tissues and fascia. The fascia is a thick sheet of tissue that underlies the skin and acts like an envelope around all the muscles of an extremity. It separates the skin and underlying fat from the muscles, blood vessels, nerves and bones of the extremities, pelvis and trunk.[1]

Soft tissue sarcomas (STS) are a rare group of cancers compromising ~ 1% of all malignancies. There has been a slight increase in incidence, and half of STS patients are over the age of 65 years.[2]the pathogenesis of most STS remains unknown. Genetic, environmental and immunological factors have been identified as risk factors. It is likely that the cause of STS is multifactorial. STS may arise in any part of the body, predominantly in the extremities (45% lower limb 29% upper limb (16%), trunk (25%), head and neck (13%), and retroperitoneum (9%) [2] The etiology of most benign and malignant soft tissue tumors is unknown. In rare cases, genetic and environmental factors, irradiation, viral infections and immune deficiency have been found associated with the development of malignant soft tissue tumours. There are also isolated reports of soft tissue sarcomas arising in scar tissue, at fracture sites and close to surgical implants[3] however, the large majority of soft tissue sarcomas seem to arise de novo, without an apparent causative factor. Several studies, many of them from Sweden, have reported an increased incidence of soft tissue sarcoma after exposure to phenoxyacetic herbicides, chlorophenols, and their contaminants (dioxin) in agricultural or forestry work[4]. Other studies have not found this association. One explanation for different findings may be the use of herbicides with different dioxin contaminations [5] The reported incidence of post-irradiation sarcoma ranges from some few per thousand to nearly one percent. Most incidence estimates are based on breast cancer patients treated with radiation as adjuvant therapy[6]. Human herpes virus 8 plays a key role in the development of Kaposi sarcoma and the clinical course is dependent on the immune status of the patient [7]. Epstein-Barr virus is associated with smooth muscle tumors in patients with immunodeficiency[6].

II. Clinical Presentation and Diagnosis

Most soft tissue sarcomas of the extremities and trunk present as painless, accidentally observed tumors, which do not influence function or general health despite the often large tumor volume. The seemingly innocent presentation and the rarity of soft

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tissue sarcomas often lead to misinterpretation as benign conditions. Epidemiological data regarding size and depth distribution for benign and malignant soft tissue tumors' in Sweden have been used to formulate simple guidelines for the suspicion of a sarcoma: superficial soft tissue lesions that are larger than 5 cm and all deepseated (irrespective of size) have such a high risk (around 10 percent) of being a sarcoma[8-9] that such patients should ideally be referred to a specialized tumor centre before surgery for optimal treatment [10-12].

Imaging of soft tissue sarcomas is often helpful and in many cases may be diagnostic[13]. Roentgenograms are useful when the lesion is large or causes injury or damage to a bone. A computed tomography (CT) scan is frequently valuable in clearly displaying the alteration in the shape and size of a part and the character of the soft tissue material[14]. The magnetic resonance image (MRI) provides the most useful information about soft tissue sarcomas and not only demonstrates the shape and size of the lesion often with remarkable clarity, but also provides some clues as to the nature of the lesion.[13, 14-16] Positron emission tomography (PET) scans are for the most part active over the soft tissue sarcoma, but more importantly, they are useful if seeking metastases, additional lesions, or particularly lymph node extensions[17-18]. Biopsy is a key step in the diagnosis of soft-tissue tumors. The position of the biopsy site within the lesion has a major significance because soft-tissue tumors may have regional morphologic variations[19-21]. As a result of that heterogeneity, multiple samples are required to establish a diagnosis. Carcinomas, by contrast, are commonly homogeneous and a single tissue core or aspirate is sufficient for diagnosis. The biopsy incision or the needle puncture hole, and the tract to the tumor, must be made with the planned surgical incision site so that they will be included within the surgical specimen. Open incisional biopsy is a reliable diagnostic method because it allows the pathologist to evaluate cellular morphologic features and tissue architecture from different sites of the lesion. Furthermore, it provides material for performing ancillary studies such as immune-histochemistry, cytogenetics, molecular genetics, flow cytometry and electron microscopy.

III. Mangement of Soft Tissue Sarcoma

Although surgery remains the principal therapeutic modality in soft tissue sarcoma, the extent of surgery required, along with the optimum combination of radiotherapy and chemotherapy, remains controversial. For high grade sarcomas, greater than 5 cm, there are several possible approaches to treatment that are based on not only achieving good local control but also reducing the risk of developing subsequent systemic metastasis. The value of systemic chemotherapy depends on the specific histological subset of the sarcoma. Chemotherapy is usually indicated as primary "neoadjuvant" therapy in the treatment of Ewing sarcoma and rhabdomyosarcoma. Adjuvant chemotherapy is indicated for these specific tumour types, even if the primary site has been resected, because of the very high risk of metastasis. For other histological types of soft tissue sarcoma the value of systemic chemotherapy remains controversial. The histological type and location of disease are important predictors of sensitivity to chemotherapy and thus may help in decisions on the potential benefit of chemotherapy. The majority of the randomized chemotherapy trials have shown no significant impact on overall survival; however they have found that chemotherapy does improve disease free survival, with improved local and loco-regional control. [81] Radiation is often helpful in decreasing the likelihood of local recurrence and possibly metastasis. It may be given preoperatively,intra-operatively and sometimes postoperatively.[22]

Brachy therapy, which consists of inserting a catheter and implanting a radioactive source for usually a 3-day period, appears to decrease the likelihood of local recurrence.[23]

The objectives of this work are to evaluate the management of soft tissue sarcoma (STS) In fields of the clinical presentation of STS regarding the age, sex, site, size, the surgical procedure that done and its complications and the effect of radiation and chemotherapy in soft tissue sarcoma.

IV. Patients and Methods

This is a retrospective descriptive study that has been investigating the patients of soft tissue sarcoma presented to Medani teaching hospital & oncology hospitalduring the period from January 2010 to August 2012. It include a 55 case of STS, patients who presented with tumor not amenable to surgical intervention either not fit for surgery or with distal metastasis; also those patients whom were less than 15 years of age and are treated in the Pediatric Center were excluded .

V. Results

During the period from January 2010 through August 2012 (32 month), out of a total of 55 soft tissue sarcoma 29 of patients were female 26 were male with ratio of 1.1: 1, 43 of them live in rural area (78.2%) and 12 live in urban (21.8%). The ages ranged from 17 to 85 years, with a mean age 51 years. The peak age range was 40–60 years 21 patients (38.2%) (Table 1)

We found that the lower limb is the most common site affected by soft tissue sarcoma 24 (43.6%) then the retroperitoneal region 13 (23.6%) then trunk 9 (16.4%) then upper limb 6 (10.9%) then head and neck 2 (3.6%) others 1 (1.8%) (Fig-1). also the

common size of presentation more than 15 cm in the greatest dimension 26 of patients (47.3%) and few of them present with tumour less than 5 cm in its greatest dimension 5 patients (9.1%) . At presentation 20 cases of our studied patients (36.4%) had past history of surgery for the presenting mass, most of them in a form of excision. The imaging done for our studied patients 16 of them (29.1%) imaged by doing MRI, U/S done for 17 (30.6%), X rays done for 13 (23.6%) and CT done for 9 (16.4%) of them. The biopsy taken for diagnosing our studied patients are excision done for 32 patients (58.2%), Tru-cut biopsy for 16 (29.1%) and incision for 7 patients (12.7%).38 patient (69.1%) excised their tumour, 14 of them (25.5%) just debulking done for them, and amputation of a limb done for 3 patients (5.5%).

The result of histopathology showed that 31 patients (56.4%) excised with clear margins, and 24 patients (43.6%) with involved margins.

46 patients(83.6%) their surgical procedures end without complication, 6 patients (10.9%) have skin loss treated by skin graft , one patient end with ulnar nerve injury , one end with radial artery injury which was ligated and one them had knee stiffness treated with physiotherapy.

All the patients under study received adjuvant therapy 29 of them treated by radiotherapy alone, 17 of them by chemotherapy alone, and 9 of them treated by both.

The most common type of soft tissue sarcoma is fibrosarcoma 19 (34.5%) then liposarcoma 11 (20%) then rhabdomyosarcoma 9 (16.4%) then MFH 8 (14.5%) then leiomyosarcoma 6 (10.9%) then synovial and chondrosarcoma sarcomas 1 (1.8%). (Fig-2)

There was high rate of recurrence in our studied sample 39 patient (70.9%) within the 1st year after surgery, 15 patients (27.3%) present with distal metastasis 10 of them to the lungs, 3 to the liver, and 2 to the bone.

Also we found that recurrence of 14 out 19 fibrosarcoma, 8 out of 9 rhabdomyosarcoma, 7 out of 11 liposarcoma, 6 out of 8 MFH, 3 out of 6 leiomyosarcoma, and 1 out of 1 in chondrosarcoma.

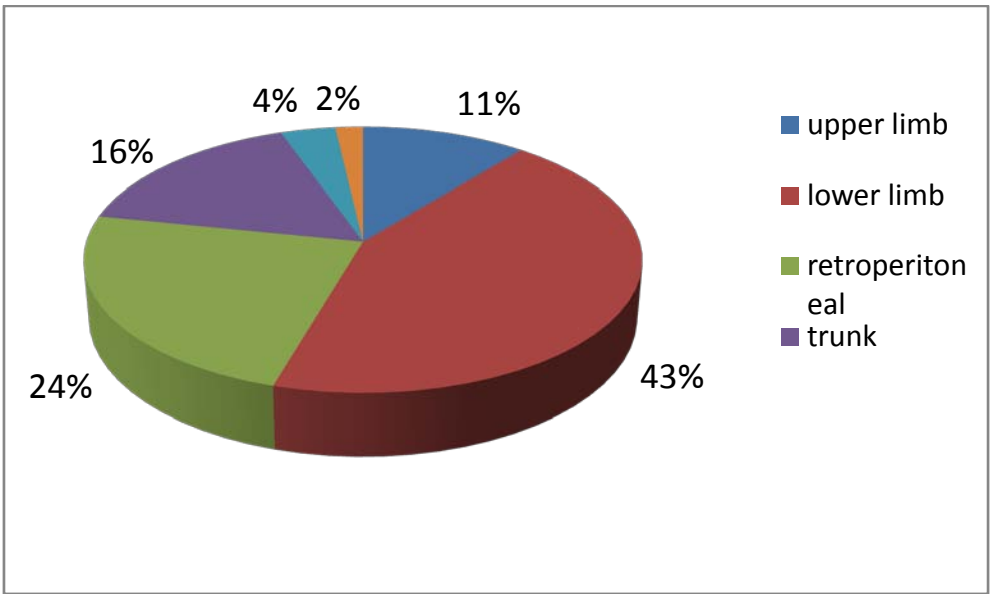

Fig. 1 : Site of STS of patients treated Madani hospital 2010-2012

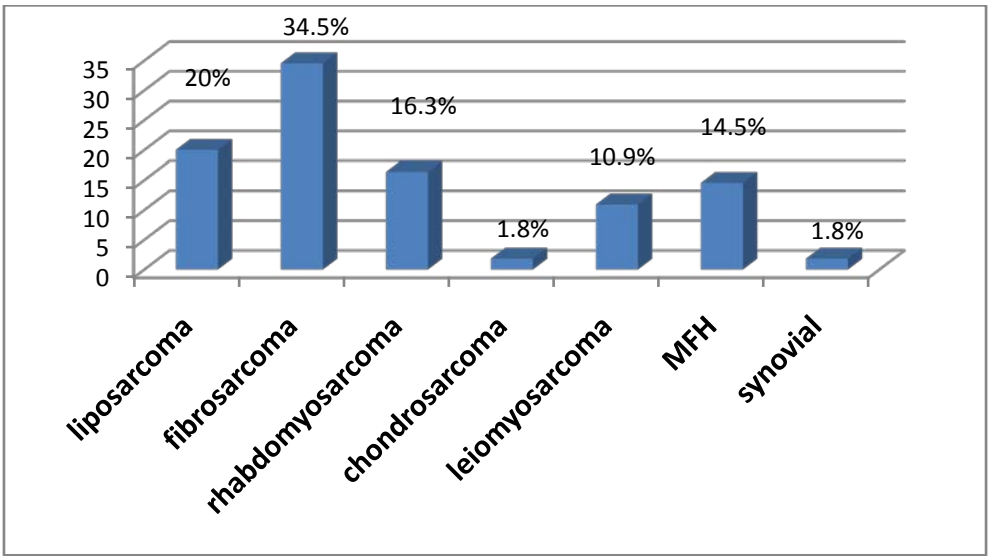

Fig. 2 : Type of STS of patients treated in Madani hospital 2010-2012

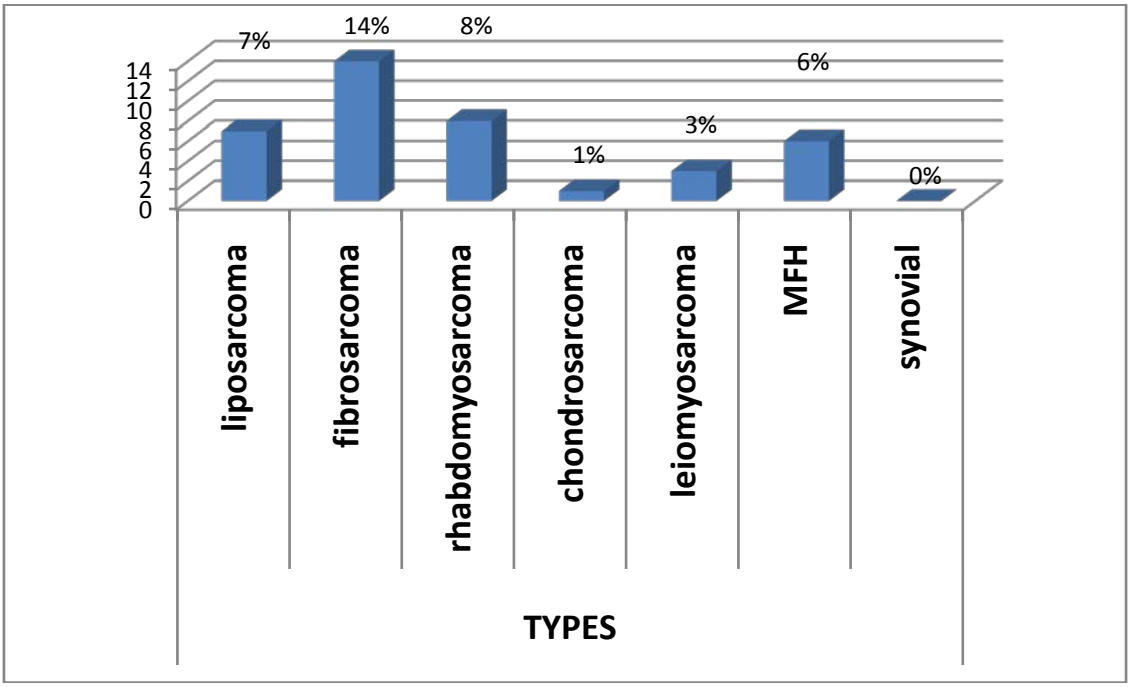

Fig. 3 : Types VS Recurrence Crosstabulation of patients with STS in Madani hospital 2010-2012

Table 1 : Frequency of the affected age group of patients with STS in Madani hospital 2010-2012

	Frequency	Percent
<20years	4	7.3%
20-40 y	15	27.3%
40-60 y	21	38.2%
>60 y	15	27.3%

Table 2 : TYPES VS METS Crosstabulation of patients with STS in Madani

Type		
	Yes	No
Liposarcoma	5	6
Fibrosarcoma	6	13
Rhabdomyosarcoma	1	8
Chondrosarcoma	1	0
Leiomyosarcoma	1	5
MFH	1	7
Synovial	0	1

VI. Discussion

This study done over a periods of 32 months in 55 case of soft tissue sarcoma, male: female ratio 1:1.1 which is slightly high in female, comparing it with study done by Yosif A.A, in Omdurman Teaching Hospital 2008[24]of 38 cases from sep 2005 to march 2008 which revealed 1:1 ratio also study done in Nigeria[25] done in 232 cases from Jan 1985 to Dec 2006 another study done in USA in Memorial Sloan-Kettering Cancer Center (MSKCC)[26] over 17 years from July 1982 to June 1999, a total of 1092 patients treated from STS affecting extremities 54% of them were male 46% female.

The age of patients in this study was ranging from 17 years to 85 years, with mean age 51 years. It is revealed that there is no pediatric case treated with STS in the centre at that period of time when this study was conducted.

Yosif A.A found a similar result, with age ranging 16 years to 81 years with slightly lower mean age 44 years. And also there was no pediatric case.

In this study fibrosarcoma found to be the most common type (n-19) 34.5% the same as Yosif A.A (n-11) 28.9%. That differ from the other study in Nigeria and internationally where they found MFH as most common type encounter as found in the study done in MSKCC 28% of patients were MFH.

The geographical distribution of patients in this study revealed that the rural people suffer more; they constitute 78.2% of patient. This reflected their problem of poor health care, because they live far away from medical centers. The geographical distribution not included in the others studies.

The common site that are affected in this study is the lower limb account 43.6% of the studied patients, in the lower limb the thigh is affected more than the other part, this may be due to the bulk of the muscle found in this site, which is in agreement with locoregional and international data. [25, 26]

Most patient present late in the course of their disease and that is reflected by large tumour size at presentation, 47.3% of our studied patients present with size more than 15cm in greatest dimension which is the same finding in Yosif AA study, but in the study which was done in MSKCC most of patients present with mass less than 5cm in diameter constituting 38% of patients.

The history of past excision found in 36.4% of patients that affects the recent surgery in achieving clear margins (56.4% only excised with clear margins) without injury to the nearby structure and wound complication, which was also found by Yosif AA, and in the study of MSKCC 37% of patients had their tumours resected elsewhere then referred to the centre.

When Yosif AA study was conducted he recommended to use the advance tool of imaging to be used specially CT&MRI, in this study we found that there is partial improving in this setting, the MRI used in 29.1% and CT in 16.4% in studied patient.

The surgery performed for patients in this study, 69.1% of them their tumour excised with clinical clear margins, 25.5% of them just debulking done for them because of large size of the tumor or incasing vital structures, and amputation done for 5.5% of the patients little lower than Yosif AA where it done for 8.4% of patients.

Because our patients have seen in a combined clinic including surgeons, oncologists, radiologists, and histopathologists they have full chance of receiving adjuvant therapy. 52.7% of them received radiotherapy, 30.9% received chemotherapy and 16.4% of patients treated by radio chemotherapy. Where in Yosif AA study radiotherapy done for 47.4% and chemotherapy done for 18.4% of patients. There were 4 patients in Yosif AA study treated by BCG which is not carried in this study.

Follow up of patients in this study done when they came in the combined clinic and others by phoning them. We found that there is high rate of recurrence of their tumors which was happened in 70.9% most of whom debunking was done for them, MSKCC study better outcome regarding recurrence which was occurred 15% of their patients.

Metastasis happens in 27.3% of patients of our studied patients, near the result found in MSKCC study which constituting 25% of their patients.

VII. Conclusion

The late presentation of the tumors as reflected by huge size at first presentation making the management a real challenge. Soft tissue sarcoma found to be common in our community and causing big problem in its treatment because of its high rate recurrence and delayed presentation.

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Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

Impact of Socioeconomic Status on Development of Incarcerated Inguinal Hernia in Children Treated in Gezira National Center for Paediatrics Surgery (GNCPS)

By Mogahid Mahmoud Mohammed Ali & Faisal Abdelgalil Nugud
University of Gezira, Sudan

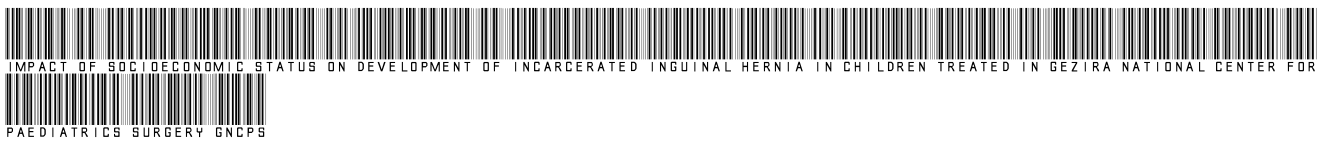
Abstract - Background: Inguinal hernia is common surgical problem in paediatrics and incarceration is the most common subsequent complication if left untreated. The fact that there is effect of the socioeconomic factors on development of incarceration in form of delayed presentation.

Objectives: To determine the relation between socioeconomic status and development of incarcerated inguinal hernia among children presented to (GNCPS).

Results: 43 case presented with incarcerated inguinal hernia within the study period those <5Yrs were 40 (93,0%) from 5-10 yrs were 2 (4,7%) while 1 (2,3%) was more than 10 yrs. We have 42 male and 1 female patient the waiting time for surgery was 3 months in 14 (32,6%) while it was 3-6 months in 10 cases (23,3%) and more than 6 months in 19 (44,2%).

Keywords : *incarcerated inguinal hernia, manual reduction, socioeconomic effects.*

GJMR-I Classification : *NLMC Code: WF 350*



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Mogahid Mahmoud Mohammed Ali [α] & Faisal Abdelgalil Nugud [σ]

Abstract - ***Background:*** Inguinal hernia is common surgical problem in paediatrics and incarceration is the most common subsequent complication if left untreated. The fact that there is effect of the socioeconomic factors on development of incarceration in form of delayed presentation.

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Most of our patient came from rural areas constituting 31cases(72,1%) while there was 12 (27,9%).This indicate that most of studied patient from rural areas. Intra operatively the content was small bowel in 24 (55,8%) while in 2 (5,4%) it was large bowel in 2 (4.7%) and testes in 5 (11,6%).the condition of the contents was viable in 31(72,1%) while dusky in 2 (4,7%) and gangrenous bowel in 1(2,3%).

Conclusion: Incarcerated inguinal hernia increases in patients with low socioeconomic class.

Keywords : incarcerated inguinal hernia, manual reduction, socioeconomic effects.

I. Introduction

Studies on incarceration and its socioeconomic implications have yielded interesting results. The underdeveloped countries have increase in the risk of incarceration by three-folds, while reduction has been made at a low rate of 34% because these patients attended the hospital late.[1-2]

Classically, the child would present with painful and persistent inguinal swelling. There may be redness and tenderness on examination. Abdominal distension and signs of intestinal obstruction may set in if diagnosis is not made early. Unless there is clear peritonitis or bowel compromise, attempt should be made to manually reduce the incarcerated hernias by using a technique called taxis. In this technique, with the infant relaxed (using sedation if necessary), gentle inferolateral pressure is applied to the incarcerated hernia with some pressure from above to straighten the canal. Approximately 80% of incarcerated inguinal hernias can be reduced using this technique [(3)]. Because of the high rate of early recurrent incarceration, it is recommended to admit these children and then do the surgery 24 to 48 hours later after the edema has subsided. Any child with an incarcerated hernia that cannot be reduced must undergo immediate operative repair. It is important not to reduce the hernia under anesthesia before the incision in order to inspect the incarcerated bowel for evidence of strangulation. In girls, an incarcerated ovary may be present in the hernia sac. If reduction is unsuccessful, there is a risk of vascular compromise from ovarian torsion occurring in as many as 33% of cases. Immediate repair can prevent this complication and is recommended by multiple authorities [(3,4, 5)].

II. Patient & Methods

The author will use non-probability-based, purposeful-convenient sampling. All subjects presented to the National center of paediatrics surgery with incarcerated inguinal hernia. Some candidates were eliminated, and only those who fulfilled the inclusion criteria were considered as the final study sample.

Patient presented with incarcerated inguinal hernia with obstructive symptoms will be admitted, kept fasting, fluid therapy, NG. tube, catheter. Investigations were request in form of CBC, UG, RFT and electrolytes they candidate for General anesthesia with halothane. all candidates will receive injectable antibiotics. supine position, scrubbing with Antisebtic solution. incision will be transverse inguinal. Exploration of the contents will be done then managed accordingly. hernia sac will be excised and closure of the wound. post operative follow up in form of recording the vital signs, injectable antibiotics intravenous fluids and paracetamol suppositories as form of analgesia. They discharged to be seen in referred clinic after a week for assessment of general condition and the wound.

For those patients presented early with no features of intestinal obstruction we will apply manual reduction(MR).

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III. Statistical Analysis

Data will be coded and fed in a computer to handle statistical and mathematical procedure, to display the analyzed data and present them graphically using SPSS software (statistical package for social sciences).

IV. Results

The overall number of patients seen with inguinal hernia in (GNCPS) during the study period(from Jan.2011-Jan2013) were 722 cases. from this number there were 43 case presented with incarcerated inguinal hernia. Regarding age distribution < 5 Yrs were 40 cases (93%). from 5-10 yrs were 2 cases (5,4%) while 1case (2,3%) was more than 10 yrs figure(1). The males were 42 cases (97,7%) while the females was one case(2,3%), the waiting time for surgery was 3 months in 14 cases (32,5%) while it was 3-6 months in 10 cases (23,3%) and more than 6 months in 19 cases (44,2%) Table 1. (6). patients from Gezira state were 42 cases (97.7%) and there was 1 case (2.3%) from out Gezira state. within the Gezira state We noticed that most of our candidate came from rural areas 31 cases (72,1%) while 12 cases (27,9%) from urban areas. All candidates 43 cases (100%) presented with irreducible inguinal lump with positive silk sign. The affected site was right in 27 cases (62,8%) while it was left in 15 cases (34.9%) and bilateral in 1case (2.3%).

28 cases (65.1%) present with obstructive symptoms while not in 15 cases (34.9%). Intra operatively transverse inguinal incision was applied, the contents were small bowel in 24 cases (55,8%) while in 2cases (4,7%) it was large bowel and testes in 5 cases (11,6%).the condition of the contents were viable in 31 cases (72,1%) while dusky in 2 cases (4,7%) and gangrenous bowel in 1 case (2,3%) that required resection & anastomosis. simple reduction was performed in 40cases (93%) while hot wrapping done in 2 cases (4,7%) and resection & anastomosis done in 1 case (2,3%). Regarding scrotal swelling post operatively was 27 cases (62,8%) while was not found in 7 cases (16,3%) Table (1).

Figure 1

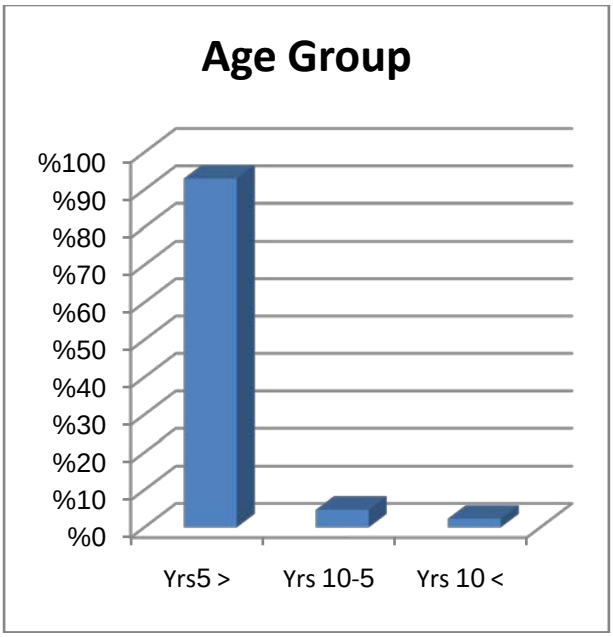
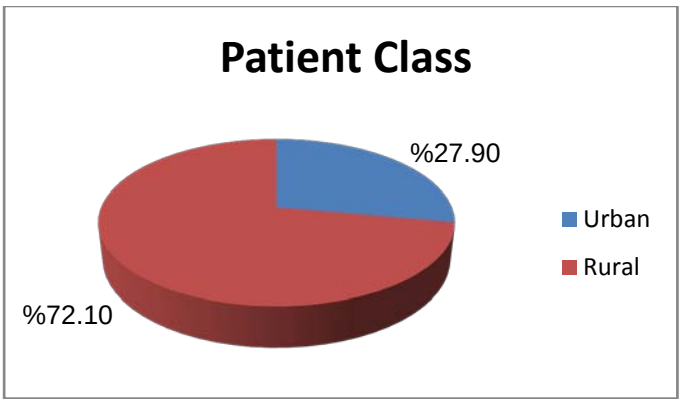


Figure 2



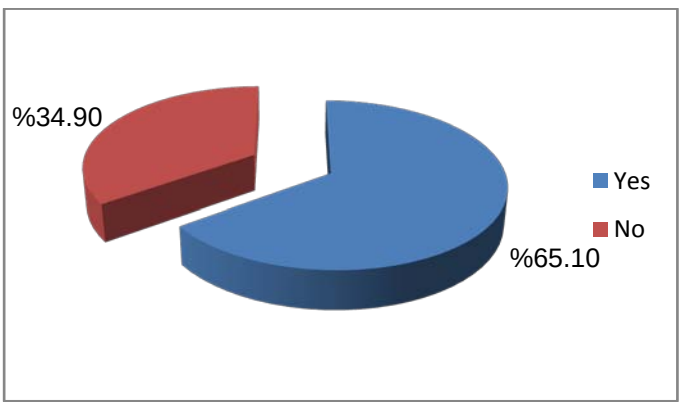


Table 1 : Scrotal Swelling

Valid	Frequency	Percentage
Yes	27	62.8%
No	7	16.3%
Total	34	79.1%

- The remaining 9 (20.9%) were not operated (manually reduced)

V. Discussion

The total number of patients seen with inguinal hernia in (GNCPS) during the study period were 722. Out of this number there were 43 (5.9%) cases presenting with incarcerated inguinal hernia.

In this study, 40 patients (93%) were under 5 year of age and 2 cases (4,7%) under 10 year of age and 1 case (2.3%) was >10 year figure(1) . This study has shown that incarceration is more frequent under 5year of age and also that the incidence of incarceration decreases by increasing in age. In comparative to literature review the incidence of pediatrics inguinal hernia is highest during the first year of life and then gradually decreases thereafter. One-third of children undergoing surgery for hernia are less than 6 months of age .[6]

Most of the patient came from rural area 31 cases (72,1%) while 12 cases (27,9%) from urban areas related to Gezira state fig.(2), perhaps this may indicate the lower educational status in our rural areas and their lack of awareness towards this problem. The fact that inguinal hernias are not self-limiting and that there is a risk of complications dictate the need for expedient surgical repair.[7]

Among our study we found that 28 cases (65,1%) of patients underwent surgical exploration from the start because they present late with symptoms and signs of intestinal obstruction. while only 15 cases (34,9%) were managed initially by manual reduction (MR). We observed that those presented with no obstructive features came from areas near the hospital and presented rapidly when they noticed the lump became irreducible.

A wait time for surgery of more than 14 days was associated with a doubling of the risk of incarceration. The overall rate of incarceration is comparable to those reported by others.[8-9]

In a retrospective report of institutional-based data, Stylianos and colleagues[10] reviewed all cases of children with an incarcerated hernia who presented to an emergency department. They calculated a risk of hernia incarceration of 9% related to a mean wait time of 8 days (range 0.5–28 days). we have long waiting time in comparable with above results we have a minimum waiting for at least 3 months and this had been explained by shortage of resources and overloaded hospital work. Our result showed that the waiting time was < 3months in 14 cases (32.6%) while it was 10 cases (23.3%) waiting for 3-6 months and 19 cases (44.2%) in a period more than 6 months. We noticed that most of our patients wait 6 months or more after booking for surgery this may contributed to a lot of factors such as lack the parents information regarding this problem, traditional concepts, socioeconomic and financial factors.

Among our patients we have 15 cases (34,9%) presented with no features of intestinal obstruction successful attempt of (MR) was applied for 9 cases while failed in 6 cases so open surgery was carried out. For those manually reduced admission for 24 hrs later for observation then operated within the next 24hrs, this going with the study done by Gahukamble and Khamage whom concluded that all children with inguinal hernia should have hernia repair within 5 days after reduction of incarceration as a precaution against recurrent incarceration.[11]

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Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

The Enormous Size of the Gallblader-A Reason for Conversion to Open Surgery in Acute Cholecystitis

By Rexhep Selmani & Arben Karpuzi
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Abstract - Laparascopic cholecystectomy is considered the treatment of choice for cholelithiasis. Laparosopic cholecystectomy can be safely performed in patients with acute cholecystitis, but there is a difference between conversion rates in patients operated within 72 hours from the onset of the symptoms and those after. The main reason for conversion on early laparoscopic cholecystectomy is the inflammation that interferes and makes the anatomy of the Calot's triangle less visible, while other factors for the conversion of laparoscopic cholecystectomy in acute cholecystitis are the timing of the operation, age, BMI, CRP, white blood cell count (WBC), fever, tenderness in the right upper abdomen and ultrasonographic finding of extremely thickened gallbladder wall, close relation of the Hartmann's pouch with hepaticoduodenal ligament, the gallbladder size and the number and size of stones. Case presentation: Here we present a case of 74 year old female patient, who presented at our institution with 6 day history of abdominal pain, nausea and fever, with physical, laboratory and ultrasound signs of acute cholecystitis.

Keywords : acute cholecystitis, laparoscopic cholecystectomy, size of the gallbladder, conversions..

GJMR-I Classification : NLMC Code: WI 750, WI 755

Strictly as per the compliance and regulations of:

The Enormous Size of the Gallblader –A Reason for Conversion to Open Surgery in Acute Cholecystitis

Rexhep Selmani [α] & Arben Karpuzi [σ]

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Keywords : acute cholecystitis, laparoscopic cholecystectomy, size of the gallbladder, conversions.

I. Introduction

Mouret introduced laparoscopic cholecystectomy in 1987. It has rapidly replaced open cholecystectomy as the standard treatment (1). Laparascopic cholecystectomy is considered the treatment of choice for cholelithiasis. It has advantages over traditional open cholecystectomy in terms of minimal post operative pain, shorter hospital stay, better cosmesis and earlier recovery (2,3). With growing experience and overcoming the learning curve, a selection criterion has become more liberal. Most of the previous contraindications such as morbid obesity, previous upper abdominal surgery and acute cholecystitis are no longer absolute. Attempts can be made in all cases of gall stone diseases with laparoscopic procedure except for patients with bleeding diathesis, carcinoma gallbladder and patient not fit for general anaesthesia(4). However, of all LC 1-13% requires conversion to an open if the anatomy of Calot's triangle is not clear or an uncontrolled bleeding occurs (5).

Laparoscopic cholecystectomy can be safely performed in patients with acute cholecystitis; however, the rate of conversion remains higher when compared with patients having chronic cholecystitis(6,7), but without statistically significant difference(8). However, there is a difference between conversion rates in patients operated within 72 hours from the onset of the symptoms and those after (8). Adhesions are amongst the common reasons for conversion of laparoscopic cholecystectomy(9). The main reason for conversion on early laparoscopic cholecystectomy is the inflammation that interferes and makes the anatomy of the Calot's triangle less visible (8,10). Thus, for surgeons it would be helpful to establish criteria that would assess the risk of conversion preoperatively. The preoperative predictive factors for the conversion of laparoscopic cholecystectomy in acute cholecystitis are the timing of the operation, age, BMI, CRP, white blood cell count (WBC), fever, tenderness in the right upper abdomen and ultrasonographic finding of extremely thickened gallbladder wall, close relation of the Hartmann's pouch with hepaticoduodenal ligament, the gallbladder size and the number and size of stones (5,8).

II. Case Presentation

Here we present a case of 74 year old female patient, who presented at our institution with 6 day history of abdominal pain, nausea and fever. She was 153 cm tall and she weight 45 kg. Physical examination showed an abdomen with a palpable tender mass in the lower right quadrant with positive Murphy's sign and rebound tenderness. Laboratory blood tests revealed a leukocytosis of 14.1 $\times$ 10^9/L, C-reactive protein of 48 mg/L and normal kidney and liver function tests. Abdominal ultrasonography showed a enormously enlarged gallbladder with thickened and stratified

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(Figure 1), with fluid supra- and sub-hepatically. Free air within the gallbladder wall was not seen. She was admitted to our hospital with the diagnosis of acute cholecystitis.

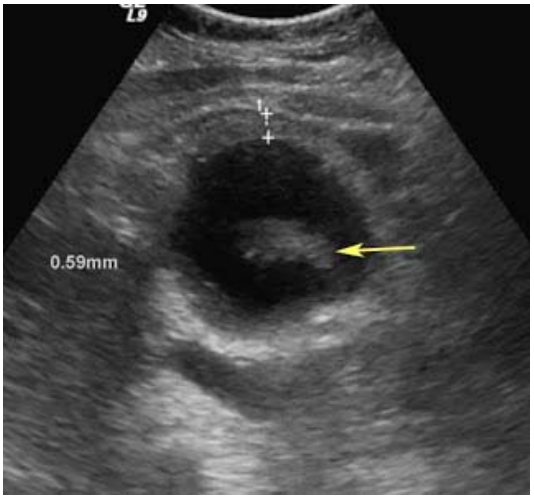

Figure 1 : Ultrasound image of the gallbladder acquired at presentation of the patient in the emergency department. The gallbladder is shown with a thickened wall suggesting inflammation.

Although 6 day of history of abdominal pain the laparosopic cholecystectomy was considered the treatment of choice. After short preoperative preparation the patient was sent to operating theatre. The laparoscopy revealed enormously large, strongly dilated and empyematic gallbladder extending down to the right iliac fossa, with thickened wall very difficult for grasping. We punctuate the gallbladder and evacuated more than 150 ml of fluid to be able to grasp the gallbladder. Because of extremely large gallbladder and patient's relatively short xiphoid-umbilicus distance of 12,7 cm, grasping the gallbladder, making the cephalic traction over the surface of the liver and handling with laparosopic instruments was practically impossible.

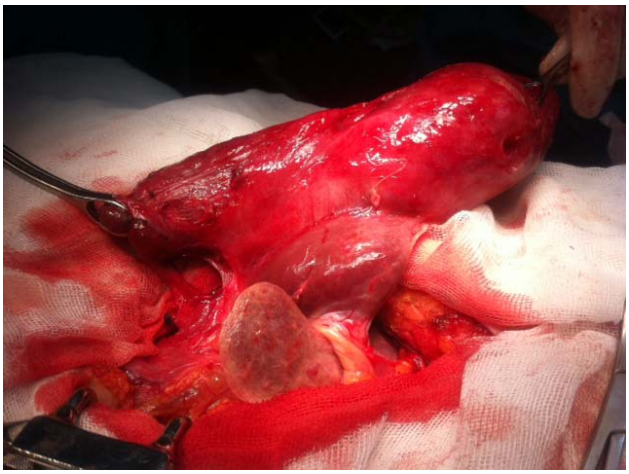

Figure 2 : Intraoperative Findings

As the critical level of safety was obtained, we converted to open surgery. Cholecystectomy was performed. Gallbladder was 19.5 cm in length whereas pathohistology revealed acute cholecystitis. Postoperatively the patient recovered well and she was discharged from the hospital on the fifth postoperative day.

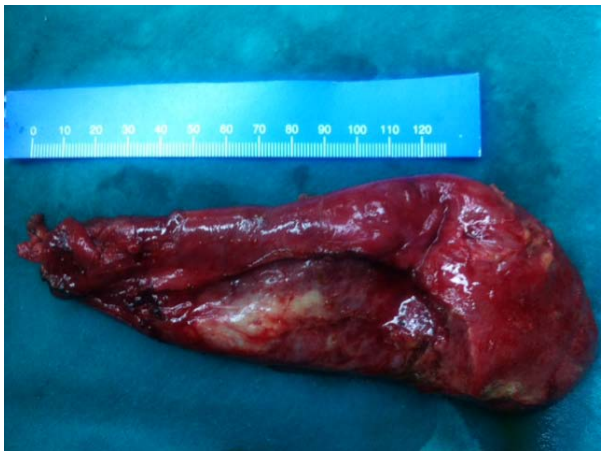

Figure 3 : Extracted Specimen

III. Discussion

Conversion rates of 2.6% to 14% had been described in literature (6,11). During the first 3 days of the onset of symptoms the conversion rate is significantly lower than in patients operated after 72 hours of the beginning of the disease(8). The main reason for the conversion at early laparoscopic cholecystectomy is the inflammation that covers the view to triangle of Callot(12), while at delayed cholecystectomy those are the fibrotic adhesions(12,13). Severe inflammation accompanied with fibrosis leads to greater chance of billiary tract lesions (14).

Conversion was necessary because of abnormal anatomy in meaning of disproportion between the size of the gallbladder and the size and the configuration of the patient's abdomen making grasping and handling the tense and thickened gallbladder, practically impossible. The gallbladder measured 19,5 cm, with very thick gallbladder wall, which was stiff, with fibrotic changes. Patients with enormous gallbladder size and acute cholecystitis tend to impose technical difficulties during laparoscopic cholecystectomy. In around 87% of the patients with gallbladder wall thickening (>4 millimeter) surgeons encountered surgical difficulties (15,16). Sonographic parameters like size of gall bladder and wall thickness are statistically significant factors for conversion to open cholecystectomy, while preoperative sonographic signs can predict the difficulty in laparoscopic cholecystectomy(5).

The additional difficulty for the conversion in our case was very short xiphoid-umbilicus distance of 12.7 cm only, including the enormous gallbladder size, creating the difficulty in positioning of the trocars and their angulation which led to poor visualization of the operative field. The average distance from the xiphoid to umbilicus in cadaveric study, was reported to be 18.2 ± 1.27 cm (17).

IV. Conclusion

Apart from the most common and well known reason for conversion to open surgery of laparoscopic cholecystectomy in patients with acute cholecystitis, the enormous size of the gallbladder can also be the reason. The additional difficulty in conversions with enormous size of gallbladder can be the short xiphoid-umbilicus distance.

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Global Journal of Medical research
Surgeries and Cardiovascular System
Volume 13 Issue 2 Version 1.0 Year 2013
Type: Double Blind Peer Reviewed International Research Journal
Publisher: Global Journals Inc. (USA)
Online ISSN: 2249-4618 & Print ISSN : 0975-5888

Atypical Atrioventricular Nodal Reentry Tachycardia with Eccentric Retrograde Left-Sided Activation of Coronary Sinus

By Trajkov I., Kovacevik D. & Gjorgov N.
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Abstract - Background: Recent anatomical and electro-physiological studies demonstrated, that in the human atrioventricular node there are two main extension, rightward and leftward posterior nodal extension (LPNE). The occurrence of eccentric retrograde atrial activation has been demonstrated to be from 6 to 8% in patients with AVNRT by several previous reports.

Objectives: The study was performed to confirm that standard right atrium ablation is effective and successful for atrioventricular node reentry tachycardia (AVNRT) with eccentric retrograde left-sided activation, masquerading a tachycardia which look like as a tachycardia using left accessory pathway.

Methods and Results: During a 7 years period (from 2002 to 2008), 865 consecutive patients underwent electrophysiological study. In the group with atrioventricular node reentry tachycardia (AVNRT) there were 178 patients. In the group with typical fast-slow AVNRT (162 pts) there was concentric retrograde activation of the both atrium.

Keywords : *atypical AVNRT, eccentric retrograde activation, catheter ablation.*

GJMR-I Classification : *NLMC Code: WX 218*

Strictly as per the compliance and regulations of:

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Conclusions: This study demonstrated the different electrophysiologic characteristics between the AVNRT patients with eccentric and concentric retrograde atrial activation. Standard ablation, but a little bit higher in the triangle of Koch, closer to the fast pathway, in the right atrium is effective and successful for AVNRT with retrograde left eccentric conduction in the coronary sinus.

Keywords : atypical AVNRT, eccentric retrograde activation, catheter ablation.

I. Introduction

AV nodal reentrant tachycardia (AVNRT), the most common form of paroxysmal supraventricular tachycardia, is characterized by nearly simultaneous activation of the atria and ventricles. The human compact AV node is small, just 3-5 mm, has a very long rightward posterior extension that travels down to the area between the tricuspid annulus and down to the floor the CS ostium.

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In the typical slow/fast AVNRT the rightward inferior extension of the AV node is using for antegrade slow pathway conduction and the fibers crossing the tendon of Todaro for retrograde fast pathway conduction.

The classical electrophysiological definition of the dual nodal pathway represents an abrupt increase of nodal A-V conduction of at least 50 ms between the Atrial and His (AH) potential intervals, with an anterograde block in the fast pathway conduction and selective conduction over the slow pathway. This phenomenon is known as a AH jump.

a) Ventricular - Atrial (VA) conduction time

A typical AVNRT is considered when the VA interval is measured either from the onset of ventricular activation (on surface ECG to the earliest deflection of the atrial activation in the His bundle electrogram or high right atrium) is < 60 ms, or < 95 ms respectively. Retrograde AV junctional pathways have been characterized as fast (HA interval<100 ms), intermediate (100–200 ms), or slow (> 200 ms).

b) Retrograde atrial activation sequence during AVNRT

AVNRT has been traditionally classified as slow–fast or typical AVNRT, and fast–slow or atypical AVNRT, according to the conventional description of dual AV junctional pathways. The fast pathway of the re-entry circuit runs superiorly and anteriorly in the triangle of Koch, whereas the slow pathway runs inferiorly and posteriorly close to the coronary sinus ostium. Indeed, in the majority of slow–fast cases of AVNRT, the site of the earliest atrial activation is close to the apex of Koch's triangle, near the AV node-His bundle junction. In the fast–slow form, the site of the earliest atrial activation is usually recorded posterior to the AV node near the orifice of the coronary sinus.

c) "Left –Variant" of atypical AVNRT

During reentry tachycardia, a small numbers of patients with AVNRT, have eccentric coronary sinus (CS) activation. The earliest retrograde activation site is on the left-sided from the coronary sinus, masquerading as tachycardia using a left accessory pathway. According the recent electrophysiological studies, from the Atrio-Ventricucar (AV) node there are two extensions, infero-

posterior and a leftward posterior nodal extension (LPNE), which take a part in the left variant of atypical AVNRT.

The purpose of this study is to assess the incidence of atypical AVNRT with eccentric CS activation, and to determinate the efficacy of the slow pathway ablation in patients with AVNRT with left side extension.

II. Methods

The study was conducted from April 2002 to October 2008 at the Clinic for Cardiology, in Skopje, Republic of Macedonia. During a 7 year period 178 consecutive patients underwent electrophysiological study for management of Atrioventricular Nodal reentry tachycardia. The indication for electrophysiology study (EPS) in these patents was symptomatic tachycardia, previous recorded tachycardia with surface electrocardiogram,

a) Electrophysiology testing and ablation protocol

Informed written consent was obtained in all patients before the procedure. Antiarrhythmic agents were discontinued for at least 4 half-lives. Three 6F quadripolar electrode catheters were introduced into the right femoral vein and positioned in the high right atrium (HRA), His bundle (HB) region, and in the right ventricular (RV) apex. One 6F decapolar electrode catheter was introduced in the left cubital or left subclavian vein for mapping of the coronary sinus (CS).The diagnostic catheters were used for either recording of local electrogram or pacing. For radiofrequency ablation, a quadripolar electrode catheter with a 4 mm distal electrode and a deflectable tip was used. Radiofrequency (RF) current was generated from ATAKR II (Medtronic). The catheter position was anatomically monitored with fluoroscopy. Surface ECG lead I, II, and V1, and intracardiac electrograms from various sites were simultaneously displayed and recorded on Pruka 4000. (GE Medical) The pacing stimuli were delivered through a programmable stimulator (Bloom Electrophysiology). Complete anterograde and retrograde electrophysiological studies for atrioventricular node (AVN) were conducted in each patient using incremental and extrastimulus testing techniques. Conduction intervals and refractory periods of AVN were measured and defined. After that was performed programmed electrical stimulation was applied in order to induce the clinical tachycardia. Baseline electrophysiological evaluation and tachycardia induction were performed during incremental pacing and extra stimulation (basic cycle length: 400 - 600 msec) from the right atrium and right ventricule.

Retrograde atrial activation sequence during atypical left variant AVNRT was determined by the intracardiac electrograms recorded from the high RA (HRA), His-bundle (HB) region and the Coronary Sinus (CS). The earliest retrograde atrial activation site was confirmed by mapping the right side of the interatrial septum and the CS. The absence of accessory pathway was confirmed by basic electrophysiological procedures.

Induced AVNRT's were classified into slow-slow, fast-slow, and slow-fast forms according to the previously described criteria

b) Slow pathway (SP) ablation

The SP ablation was performed in all patients at the conventional region at the right inferoseptal area between the tricuspid annulus and the CS ostium during sinus rhythm targeting the SP potential.

Inducibility of AVNRT was assessed after each ablation. Successful ablation was defined as elimination of the retrograde SP conduction for at least 30 minutes after the last energy application.

c) Statistical Analysis

Data was analyzed using commercially available statistical program. Continuous variables were reported as mean ± SD. Categorical variables were reported as percentages.

III. Results

a) Patient Characteristics

In the group with atypical AVNRT (16 pts), ten patients were with classified as slow/slow AVNRT, and 6 were classified with retrograde left eccentric conduction. (table1). In all patients there was no identifiable underlying heart disease.

Result of electrophysiological studies	Patients	% of 178
AVNRT slow/fast	159	89.3%
AVNRT slow/slow	10	5.6%
AVNRT with retrograde left eccentric conduction	**6**	**3.4%**
AVNRT with bystander AVRT	2	1.1 %
AVNRT with AV node diseased	1	0.26%
Total ablated patients	**173**	**97.1%**
Without ablation	5	2.9 %

AVNRT - atrioventricular nodal reentrant tachycardia,
AVRT - atrioventricular reentry tachycardia

Table 1 : Patients with AVNRT

b) Basic electrophysiological characteristic

The basic electrophysiological characteristics are summarized in table 2. All patients showed dual AV node pathways, defined as a AH jump (prolongation of AH interval of more than 50 msec) between two consecutive programmed decremental stimulation cycles with either single or double extrastimuli from right atrium. Retrograde dual AV nodal pathway physiology was also demonstrated by a sudden jump-up in H-A (VA) interval and a simultaneous shift of the earliest retrograde atrial activation site from the superoseptal to the inferoseptal area during ventricular extra stimulation. In the group of AVNRT with LPNE (6 pts), the earliest retrograde atrial activation was recorded at the proximal coronary sinus (C1.2) (fig.1.2).

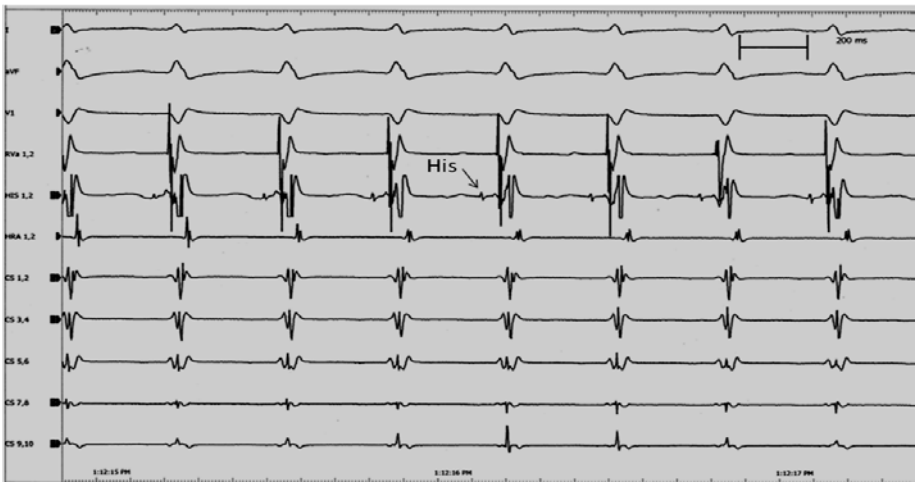

Figure 1 : Intracardial electrocardiogram of the AVNRT (slow/fast)

Слика 1. Внатрешен срцев електрокардиограм на АВНРТ (спора/брза)

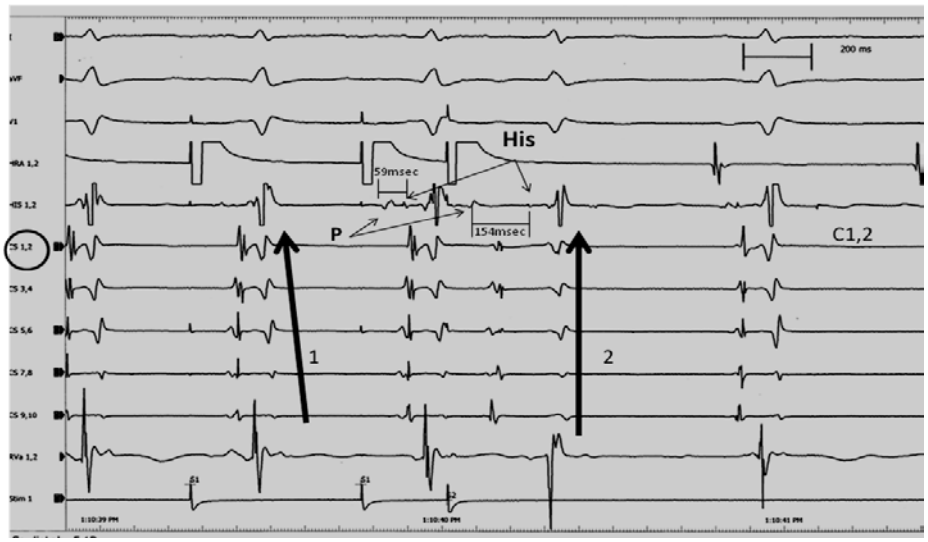

Figure 2 : Intracardial electrocardiogram in patient with AVNRT with retrograde left eccentric conduction. Earliest retrograde atrial activation is from distal coronary sinus electrodes (C1, 2), with eccentric impulse propagation (arrow 1). During the program pacing stimulation from high right atrium, there was a Atrium-His jump (AHJ) from 59 to 154 msec, with concentric retrograde atrial activation (arrow 2).

There was no difference in electrophysiological characteristics in each subform of AVNRT. There were significantly more another atrial arrhythmia (atrial flatter/fibrillation-figure 3) in the group of atypical AVNRT, especially in the subform of LPNE (table 2).

	AVNRT slow/fast (163pts)	AVNRT slow/slow (10pts)	AVNRT LPNE (6 pts)	p
AH (msec)	75 ± 25msec	86 ± 38msec	80 ± 21msec	n.s.
HV (msec)	35 ± 10 msec	32 ± 11msec	39 ± 9 msec	n.s.
AH jump	163 (100%)	10 (100%)	6 (100%)	
VA – retrograde jump	45pts(28%)	1 (10%)	0(0%)	0.01
VA Wenckebach point	410 ± 34 msec	401±55msec	422±19 msec	n.s.
junctional rhythm during ablation	155pts (95%)	8pts (80%)	5pts (83%)	n.s
Atrial flater/fibrillation during EPS	15pts (9.2%)	6pts (60%)	5pts(83%)	.001
RF energy number application	3 (1-6)	5(2-10)	4.6 (1-9)	n.s.

LPNE - leftward posterior nodal extension
EPS – electrophysiological study

Table 2 : Intracardiac characteristic of the patients during electrophysiological studies

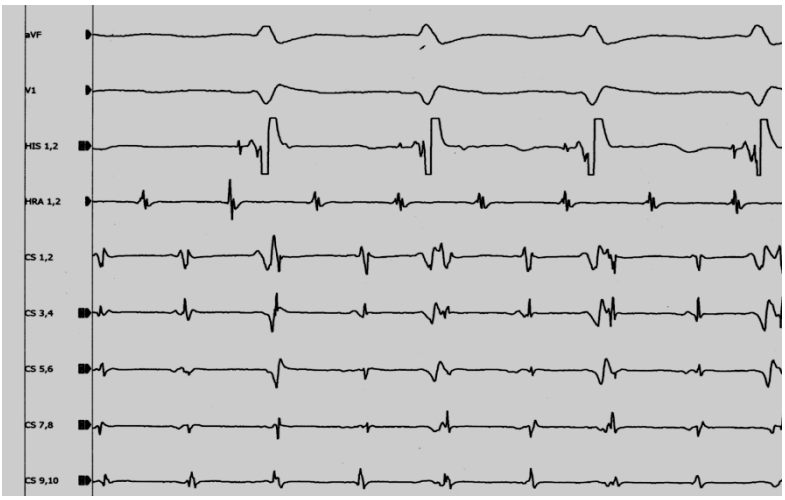

Figure 3 : Atrial flatter during electrophysiological study

Слика 3. Предкоморен флатер за време на електрофизиолошка студија

IV. Patients with Eccentric CS Activation

Typical ablation sites between the tricuspid annulus and the anterior edge of the CS ostium produces accelerated junctional rhythm (rightward inferior extension injury) but fails to eliminate AVNRT. Because of that, delivering of the radiofrequent (RF) energy was in the higher parts in the triangle of Koch. We prefer to reach the target of the leftward inferior extension along the roof of the proximal CS. We avoid positioning the catheter straight upward to the roof or in lumen of CS during ablation because in that position is very easy to injured the fast pathway or ostium of CS. (figure 4). Among six patients with the eccentric CS activation, the SP ablation was performed at the right inferoseptal region during sinus rhythm. In all six patients, accelerated junctional rhythm was induced during energy applications. After the mean of 4,6 (from 1 to 9 times of the energy application) at the right inferoseptum and midseptum, atypical AVNRT was non inducible. Four of the patients (4/6) atypical AV there was nodal echo beats (one or two). The mean Wenckebach CL of the retrograde SP significantly prolonged after the right inferoseptal ablation. (Before vs. after ablation: 405 ± 63 msec vs 466 ± 37 msec; P = 0.012). There was no complication related to the SP ablation.

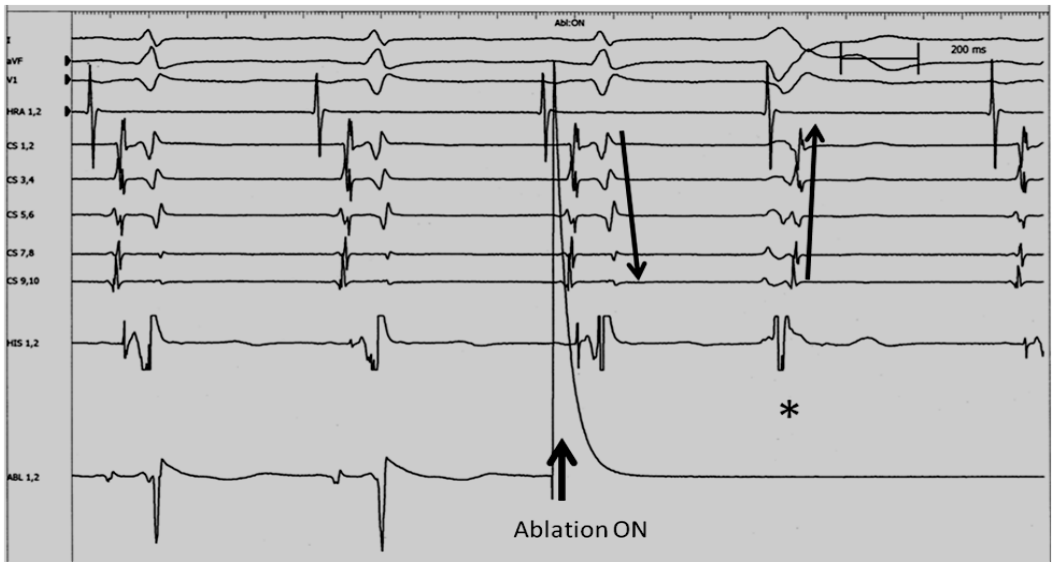

Figure 4 : Intracardial electrocardiogram of the ablation in the higher parts in the triangle of Koch with shifting of the earliest retrograde atrial activation site from the superoseptal to the inferoseptal area (*nodal extra beat) without accelerated junctional rhythm.

Post ablation follow up

No recurrence of AVNRT was observed during a mean ambulatory follow-up period of 16 ± 12 months in all 6 patients.

V. Discussion

a) Major Findings

In our study, atypical AVNRT was observed in 9% of patients (16/178). The eccentric CS activation pattern was found in (6/16 pts). It's 37.5% of the patients with atypical AVNRT. But only 3.4 % in hole group of AVNRT (6/178 pts) were with left variant. The conventional right inferoseptal SP ablation did not abolish eccentric retrograde conduction from CS, but the clinical tachycardia was not inducible in any of the 6 patients with left variant of AVNRT. Standard right atrium ablation is effective and successful for AVNRT with retrograde left eccentric conduction in the coronary sinus.

b) Incidence of eccentric coronary sinus activation pattern in AVNRT

Hwang et al.[3] reported that the earliest retrograde atrial activation was recorded within the CS in 0% (0/310 patients) among typical form and in 43% (20/46 patients) among atypical form, while Nam et al.[1] reported its incidence of 6% (3/52 patients) among typical form and 80% (8/10 patients) among atypical form. Chen et al.[5] reported its incidence of 8% (16/211 patients) among typical form and 14% (2/14 patients) among atypical form.

c) Slow pathway ablation for atypical AVNRT with eccentric coronary sinus activation

Whether the retrograde left-sided atrionodal connection constitutes the critical component of the reentrant circuit or only an innocent bystander in atypical AVNRT with the eccentric CS activation pattern is controversial.[1-3] Furthermore, whether the eccentric CS activation pattern during atypical AVNRT is the hallmark of AVNRTs that require left-sided ablation remains to be elucidated. Jackman et al.[4] reported that the leftward PNE constituted the retrograde limb of the reentrant circuit and the SP ablation at the earliest retrograde activation site within the proximal CS was, therefore, required to eliminate atypical AVNRT with the eccentric CS activation pattern. Conversely, others postulated that the retrograde left-sided atrionodal connection was an innocent bystander; therefore, conventional right-sided SP ablation was sufficient to eliminate inducibility of atypical AVNRTs with the eccentric CS activation pattern.[3,5]. Otomo[6] , among eight patients with the eccentric CS activation, the standard right-sided ablation lengthened the VA Wenckebach CL and rendered atypical AVNRT nonsustained in seven of eight patients (88%), possibly suggesting partial injury to the retrograde eccentric SP induced by the right-sided ablation. The retrograde eccentric SP conduction was eliminated only after the SP ablation at the earliest atrial activation site within the CS.

VI. Conclusion

Atrioventricular node reentry tachycardia can be associated with eccentric retrograde left-sided activation, masquerading as tachycardia using a left accessory pathway. In our study, incidence of atypical left variant of AVNRT was 3.4%.We performed standard RF ablation, but a little bit higher in the triangle of Koch, closer to the fast pathway. In that position, ablation in the right atrium is effective and successful for AVNRT

with retrograde left eccentric conduction in the coronary sinus.

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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.

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 .

You must strictly follow above Author Guidelines before submitting your paper or else we will not at all be responsible for any corrections in future in any of the way.

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.

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.

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.

Administration Rules Listed Before Submitting Your Research Paper to Global Journals Inc. (US)

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.

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

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ISSN 09755888