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Surgeries and Cardiovascular System

Renal Cell Carcinoma

Penile Anomalous Anatomy

Highlights

Soft Tissue Sarcoma

Atrioventricular Nodal Reentry

Discovering Thoughts, Inventing Future

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

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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

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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

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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

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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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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

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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]

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.
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%.

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

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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

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

Sufian Osman [α], Ahmad Alamin [σ], Ahmed Alhaj [ρ] & Ahmed Kamal A.Salih [ω]

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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%) .The most common histological type is fibrosarcoma 19 (34.5%). 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. There was high rate of recurrence in our studied sample 39 patient (70.9%) within the 1st year after surgery and 15 patients (27.3%) present with distal metastasis 10 of them to the lungs, 3 to the liver and 2 to the bone.

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

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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.

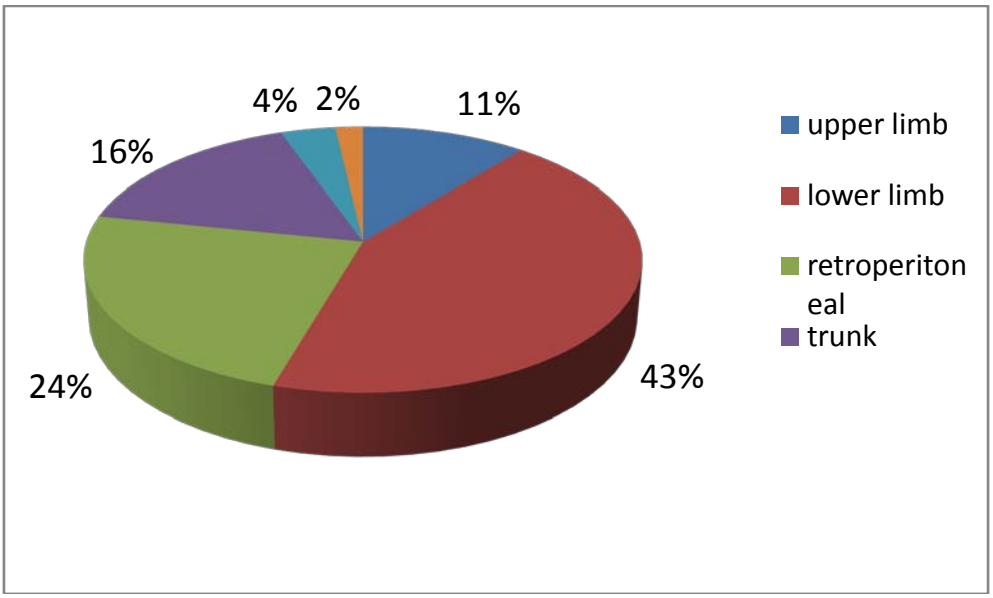

Fig. 1 : Site of STS of patients treated Madani hospital 2010-2012

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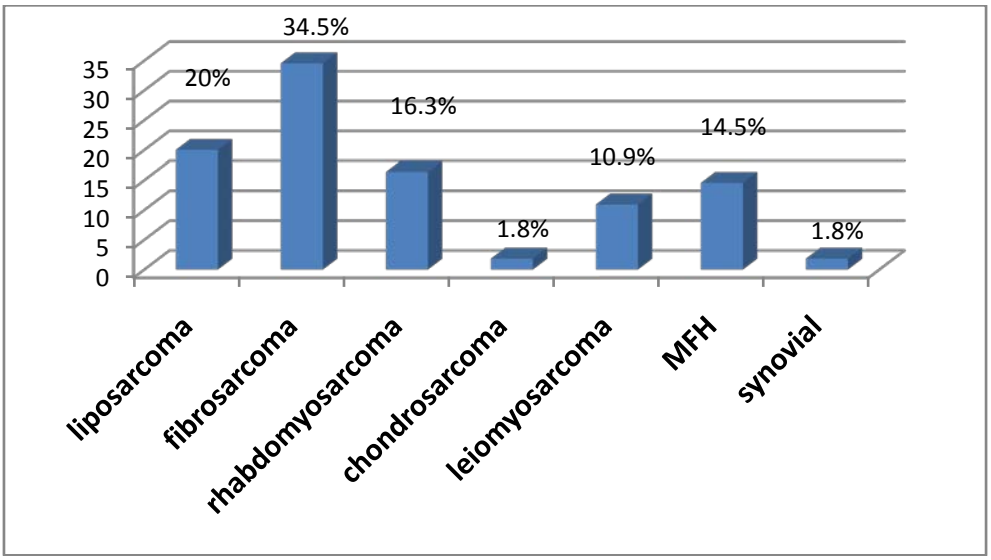

Fig. 2 : Type of STS of patients treated in Madani hospital 2010-2012

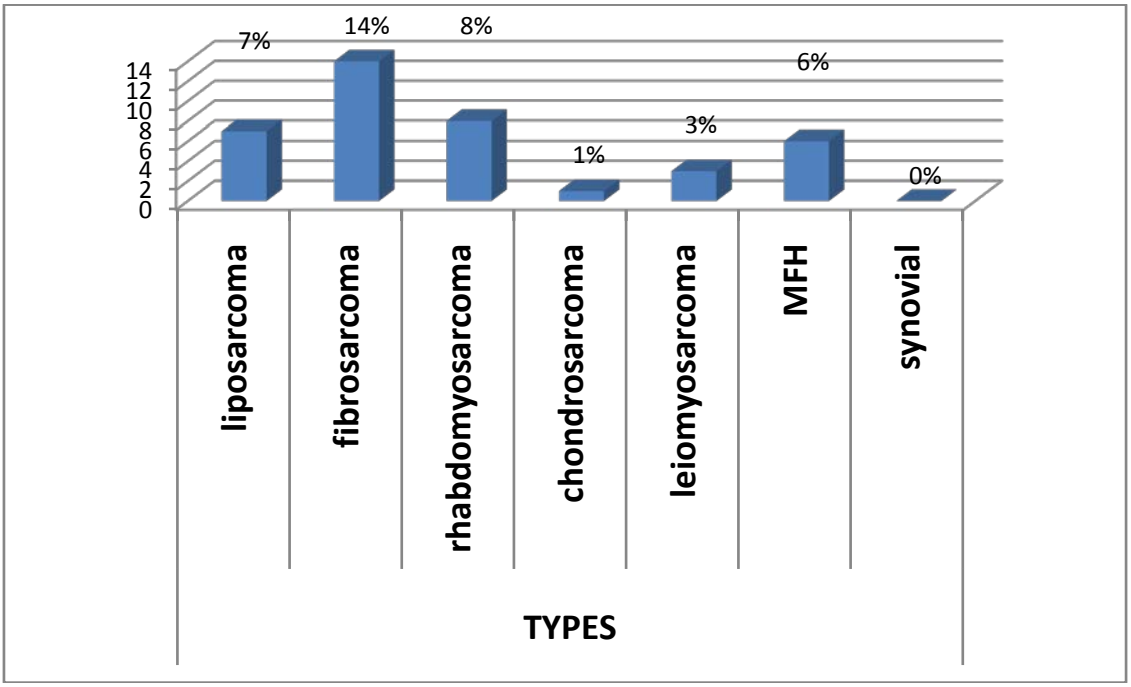

Fig. 3 : Types VS Recurrence Crosstabulation of patients with STS in Madani hospital 2010-2012

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%

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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.

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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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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
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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.*

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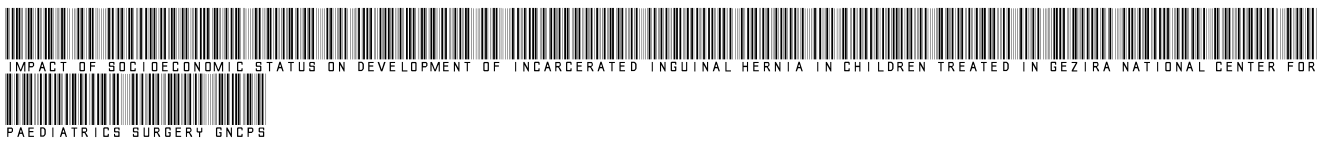

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Most of our patient came from rural areas constituting 31cases(72,1%) while there was 12 (27,9%).This indicate that most of studied patient from rural areas. Intra operatively the content was small bowel in 24 (55,8%) while in 2 (5,4%) it was large 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

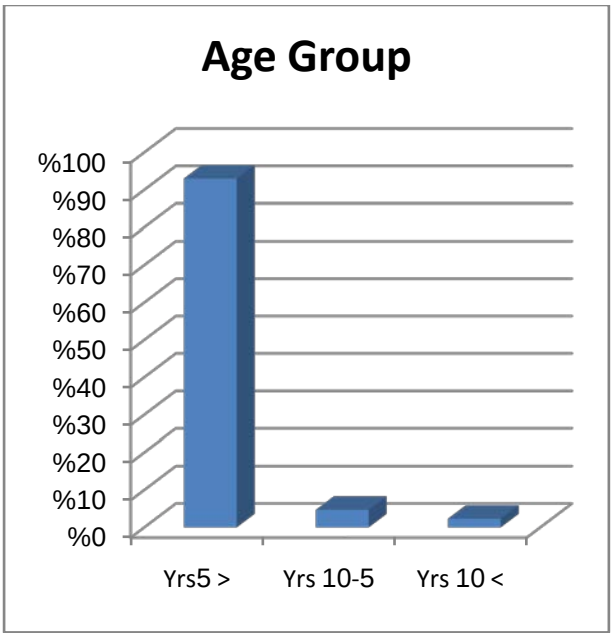
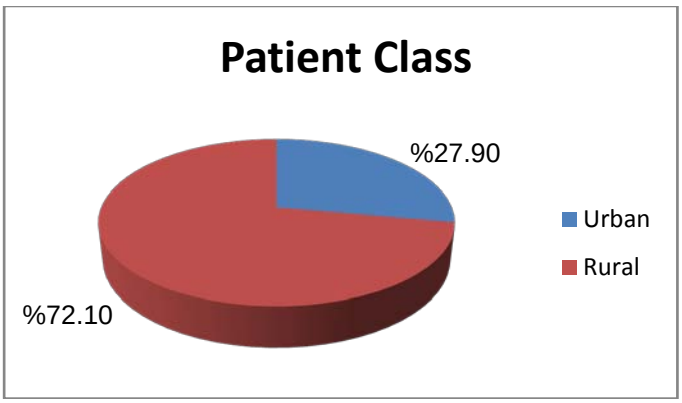


Figure 2



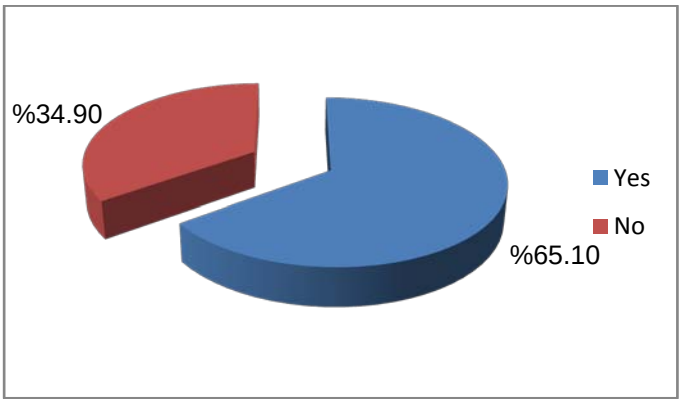


Table 1 : Scrotal Swelling

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)

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

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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

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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.

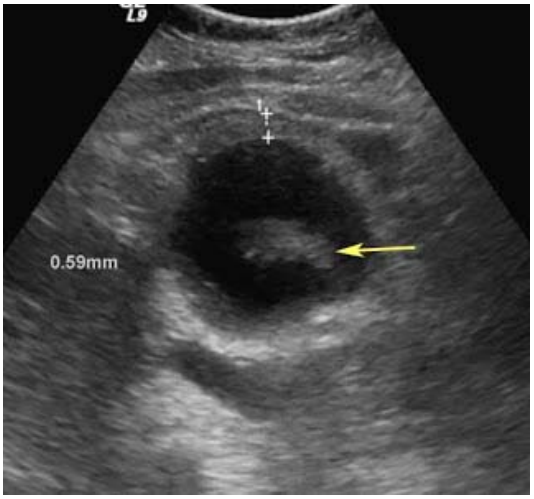

Figure 1 : Ultrasound image of the gallbladder acquired at presentation of the patient in the emergency department. The gallbladder is shown with a thickened wall suggesting inflammation.

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).

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

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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.

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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-

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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

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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).

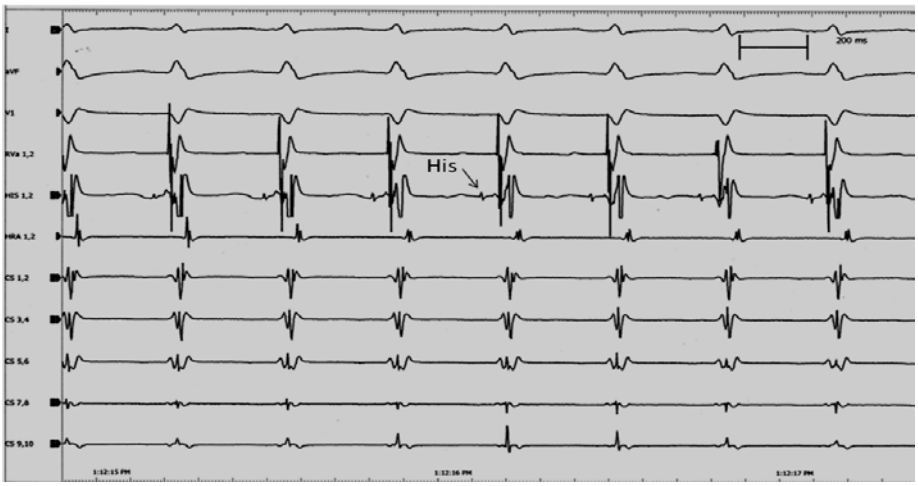

Figure 1 : Intracardial electrocardiogram of the AVNRT (slow/fast)

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

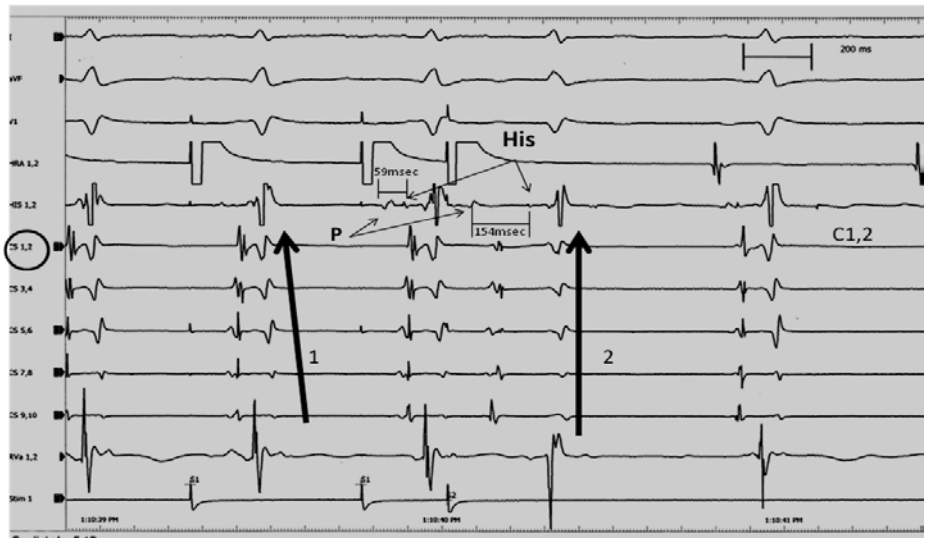

Figure 2 : Intracardial electrocardiogram in patient with AVNRT with retrograde left eccentric conduction. Earliest retrograde atrial activation is from distal coronary sinus electrodes (C1, 2), with eccentric impulse propagation (arrow 1). During the program pacing stimulation from high right atrium, 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).

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	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

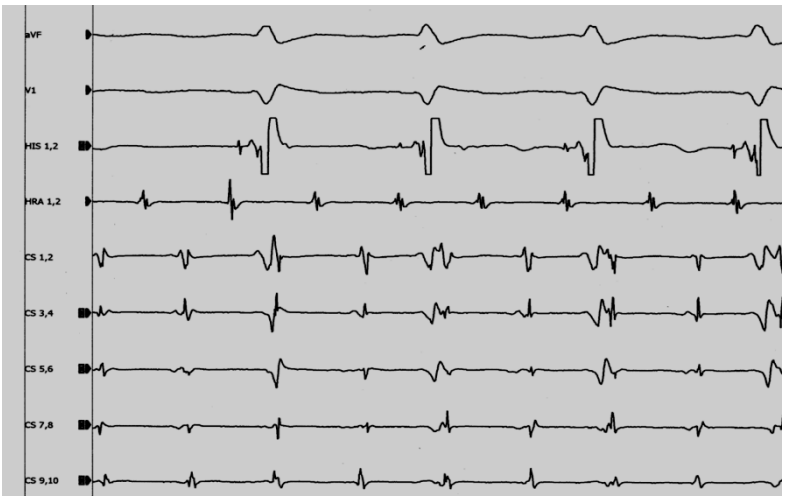

Figure 3 : Atrial flatter during electrophysiological study

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.

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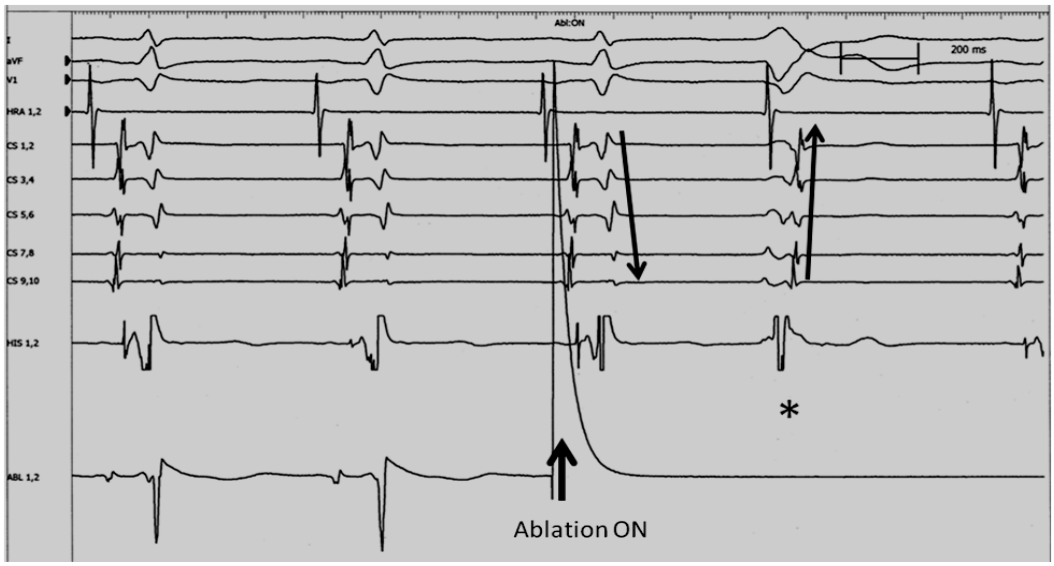

Figure 4 : Intracardial electrocardiogram of the ablation in the higher parts in the triangle of Koch with shifting of the earliest retrograde atrial activation site from the superoseptal to the inferoseptal area (*nodal extra beat) without accelerated junctional rhythm.

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

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with retrograde left eccentric conduction in the coronary sinus.

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- One should avoid outdated words.

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- Materials may be reported in a part section or else they may be recognized along with your measures.

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- Simplify - details how procedures were completed not how they were exclusively performed on a particular day.
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- Use standard style in this and in every other part of the paper - avoid familiar lists, and use full sentences.

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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:

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References	Complete and correct format, well organized	Beside the point, Incomplete	Wrong format and structuring

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