

Original Research Article

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Clinical evaluation and management of scrotal swelling

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ABSTRACT

Background: The present study was conducted with the main purpose to identify the mode of presentation, various treatment modalities and outcome of these with their complications.

Methods: This prospective study was carried out on a total of 100 subjects presented with scrotal swellings. Exhibiting symptoms were noted including discomfort, painless swelling, urine symptoms and fever. Questionnaires were used to analyse all the predisposing factors of patients, which were then categorized as idiopathic, urinary problems, trauma or previous history. Ultrasound as well as colour Doppler was carried out on all subjects. The options for treatment were either surgical or conservative. The cases treated were recorded accordingly and follow up was done.

Results: The majority of study patients, that is, 56%, suffered with scrotal swelling on the right side, followed by left (40%) and bilateral side (4%). 63% of the subjects were presented with symptoms of painless swelling. Whereas 27% of the study subjects were presented with symptoms of pain and fever and 10% of them showed only the symptoms of pain. The majority of study subjects, that is, 71% were treated with surgical modality. Whereas 29% with conservative modality. The most common USG finding found among the study subjects was hydrocoele (37%). 37 (37.0%) subjects having hydrocoele suffered postoperative complications.

Conclusions: Younger age group and manual labourers were more prone to scrotal swellings. Few of the operated cases developed postoperative complications like epididymoorchitis. There is a resurgence of thorough clinical examination to establish a diagnosis in patients with scrotal swelling.

Keywords: Scrotal swelling, Symptoms, Treatment modality, Hydrocoele, Epididymoorchitis

INTRODUCTION

Scrotal swellings have been one of most common clinical entities one comes across in surgical practice. Hydrocoele, the common scrotal swelling, is an abnormal serous fluid accumulation in any section of the processus vaginalis or in tunica vaginalis. Testicular tumour accounts for 1 to 2% of total malignancies in male; with cisplatin combination chemotherapy agents' advent, the testicular tumour treatment changed dramatically with decent 5 year rate of survival in late cases and complete remission (disease-free state) attainable in the majority of early cases.¹ Sometimes, the scrotum can swell without any apparent cause. *Clostridium welchii* and *Streptococcus*

haemolyticus is assumed to cause this condition called as idiopathic scrotal oedema.² Torsion of spermatic cord or testis is a serious surgical emergency because it leads to gonadal blood flow strangulation, resulting in testicular necrosis and atrophy. It is frequent among prepubertal males between the ages of 12 and 18. Until proven otherwise, acute scrotal swellings in children imply testicular torsion. For diagnosing accurately, around two-thirds of the subject's physical and history examination are sufficient.³

Obliterative endarteritis of the scrotal vessels combined with superinfection causes Fournier's gangrene of the scrotum.⁴ The treatment of testicular tumours has changed dramatically with complete remission due to the

understanding of specific tumour markers, breakthroughs in radiography and development of chemotherapeutic drugs. Due to wide range of medical conditions, it is critical to identify the most prevalent cause as well as have a better knowledge of the illness in order to provide targeted and specialized treatment for managing the condition.

Management is accomplished by several approaches for each type of scrotal swelling. The gold standard for managing such cystic swellings of the scrotum continues to be surgical extirpation of lesion. With this scenario, the present study was designed with the main aim to identify the mode of presentation, various treatment modalities and outcome of these with their complications.

METHODS

This prospective research was carried out on subjects presented with scrotal swellings to the surgical wards in Basaweshwar teaching and general hospital, Kalaburgi, for one year six months period (December 2017 to June 2019). Study was approved by institutional ethics committee and a total of 100 cases were enrolled as per inclusion criteria.

Inclusion criteria

Patient presenting with scrotal swelling of all age group, benign and malignant tumours of testes and epididymis were included.

Exclusion criteria

Patients with severe infection like Fournier's gangrene and seriously ill patient and inguinal scrotal hernias were excluded.

Each case was examined as per the proforma prepared with signed informed consent from the patients. The vital information obtained from hundred cases was compiled in a master chart under various headings. All the subjects were assigned to one of two occupational groups: sedentary (workers, students) or manual labourer. For all subjects, the duration of their symptoms was expressed in days.

Numerous presenting indications were described including pain, painless swelling, urinary symptoms and fever. Questionnaires were used to evaluate every patients' predisposing variables, which were then categorised as trauma, idiopathic, past background or urinary factors. All subjects underwent through colour Doppler and ultrasound. The treatment options were either conservative or surgical management. All the details were recorded and indicated in the tables and cases treated were recorded accordingly and follow up was done. Data were analyzed using SPSS v16.0 software and statistical analysis was done by ANOVA test, Chi square test and t test.

RESULTS

The maximum number of study cases, that was, 23.0%, were from the group of 31-40 years age, followed by 20.0% and 17.0% from 21-30 and 41-50 years of age group, respectively. The study subjects' mean age was 37.27 ± 17.18 . A maximum number of study subjects, that was, 66.0%, were manual labourers, followed by 21% and 13% of subjects were students and farmers, respectively (Table 1).

Table 1: Age and occupation wise distribution of study subjects.

Distribution	No. of cases	Percentage
Age (in years)		
<10	4	4.0
11-20	15	15.0
21-30	20	20.0
31-40	23	23.0
41-50	17	17.0
51-60	11	11.0
61-70	6	6.0
>70	4	4.0
Total	100	100.0
Mean\pmSD		
37.27 ± 17.18		
Occupation		
Farmer	13	13.0
Manual Labourers	66	66.0
Students	21	21.0
Total	100	100.0

Table 2: Duration of swelling.

Duration	No. of cases	Percentage
1-10 days	26	26.0
11-100 days	28	28.0
101-365 days	36	36.0
1-5 years	6	6.0
5-10 years	3	3.0
>10 years	1	1.0
Total	100	100.0

The majority of study case subjects, 36% suffered swelling for the duration of 101-365 days, followed by 28% have 11-100 days, 26% have 1-10 days, 6% have 1-5 years, 3% have 5-10 years, and only 1% of study subjects have swelling for the duration of more than ten years (Table 2).

The majority of study case subjects, 56% had scrotal swelling on the right side, followed by 40% and 4% of study subjects have symptoms of scrotal swelling on the left and bilateral side. 63% of the study subjects were

presented with symptoms of painless swelling. Whereas 27% of the study subjects were presented with symptoms of pain and fever and 10% of study subjects showed only pain symptoms. The majority of study subjects, 71/100 (71%) presented with symptoms of scrotal swelling were treated with surgical modality. Whereas 29/100 (29%) of study subjects were treated with conservation modality (Table 3).

Scrotal ultrasonography (USG) was done for all 100 cases. The most common USG finding found among the study subjects was hydrocoele (37%) and painless swelling and treated with surgical modality. All epididymoorchitis (16%) of cases had the commonest symptoms of pain with fever and treated conservatively (Table 4).

Among 37 (37.0%) subjects having hydrocoele, suffered post-operative complications. Whereas all other cases treated with different modalities did not face any postoperative complications (Table 5).

Table 3: Distribution of study subjects according to side, symptoms and treatment modalities.

Particulars	No. of cases	Percentage
Side		
Bilateral	4	4.0
Left	40	40.0
Right	56	56.0
Total	100	100.0
Symptoms		
Pain	10	10.0
Pain and fever	27	27.0
Painless swelling	63	63.0
Total	100	100.0
Treatment modalities		
Surgical	71	71.0
Conservative	29	29.0
Total	100	100.0

Table 4: Comparison of symptoms, USG findings and treatment modalities.

Symptoms	USG findings	No. of cases	Treatment	
			Surgical	Conservative
Pain	Epididymal cyst	1	1	-
	Epididymitis	1	-	1
	Epididymoorchitis	3	-	3
	Haematocele	1	1	-
	Orchitis	1	-	1
	Spermatocele	1	1	-
	Torsion testes	1	1	-
	Varicocele	1	1	-
Pain with fever	Epididymoorchitis	16	-	16
	Haematocele	2	2	-
	Orchitis	5	-	5
	Pyocele	1	1	-
	Torsion testes	3	3	-
Painless swelling	Ca. testes	3	3	-
	Epididymal cyst	2	1	1
	Epididymitis	1	-	1
	Epididymoorchitis	1	-	1
	Haematocele	1	1	-
	Hydrocoele	37	37	-
	Pyocele	7	7	-
	Varicocele	11	11	-
Total	-	100	71	29

Table 5: Postoperative outcome of cases.

Variables	No. of cases	Postoperative complications	Percentage
Ca. testes	3	0	0.0
Epididymal cyst	3	0	0.0

Continued.

Variables	No. of cases	Postoperative complications	Percentage
Epididymitis	2	0	0.0
Epididymoorchitis	20	0	0.0
Haematocele	4	0	0.0
Hydrocoele	37	5	5.0
Orchitis	6	0	0.0
Pyocele	8	0	0.0
Spermatocele	1	0	0.0
Torsion testes	4	0	0.0
Varicocele	12	0	0.0
Total	100	5	5.0

DISCUSSION

Scrotal swellings were the common surgical problems. In scrotal swelling clinical examination was the primary tool for diagnosis. Pain and swelling were the most prevalent scrotal issues that required medical attention in adult male and adolescent patients. The commonest scrotal pain caused in adults were epididymoorchitis or bacterial epididymitis, although torsion had been more prevalent in younger age group.⁵⁻⁸ Management was carried out by several approaches for each type of scrotal swelling. The gold standard for managing such cystic swellings of the scrotum continued to be surgical extirpation of lesion. Hence the present study was designed with the chief purpose to identify the mode of presentation, various modalities of treatment and outcome of these with their complications.

In our study, the maximum number of study subjects, 23% were in group of 31-40 years of age, followed by 20.0% and 17.0% of study subjects did belong to age group of 21-30 and 41-50 years respectively. These outcomes were comparable with the Borah et al findings wherein the group of 31-40 years of age had maximum (29%) number of cases, followed by 21-30 years (27%).⁹ Furthermore, in a study research carried out by Chauhan et al highest number of subjects belonged to 21-30 years of age group (41%), followed by 31-40 (18%) and 41-50 years (13%).¹⁰

In our study, right-sided scrotal swelling was observed in 56% of study subjects, left side in 40% of subjects, while bilateral scrotal swelling was observed only in 4% of the study subjects. These findings were compared with the research findings of several other researchers reported in the literature. Patel et al study reported right-sided scrotal swelling among 59% cases, left-sided in 39% and bilateral scrotal swelling in 2% of the patients.¹¹ Whereas Mahala et al reported right-sided scrotal swelling in 59% patients, left-sided in 38%; while bilateral scrotal swelling was reported in only 3% of total cases.¹²

In the present study, ultrasonography was advised for all the 100 study subjects. USG findings revealed that most study subjects, that was, 37% had a hydrocele and 16% of study subjects were diagnosed with epididymoorchitis.

These findings were in concurrence with Pasoriya et al wherein sonological evaluation of scrotal pathology observed hydrocele in 32% cases followed by epididymoorchitis (28%) and varicocele (10.63%).¹³ Furthermore, Luzzi reported hydrocele as the commonest scrotal swellings cause and the majority of epididymoorchitis could be managed with a conservative treatment modality.¹⁴ Wound infection and hydrocele were the common complications in our patients, similar to other study reported by Reynard et al.¹⁵

Limitations

This was single centred study conducted in the middle part of Karnataka with limited sample size. A multicentric study with larger sample size will help in understanding the different modes of presentation as well as management of scrotal swellings.

CONCLUSION

The results of our study delineated that the younger age group and manual labourers were more prone to scrotal swellings. Few of the operated cases developed post-operative complications like epididymoorchitis. There is a resurgence of thorough clinical examination to establish a diagnosis in patients with scrotal swelling. Most of the study subjects presented with scrotal swelling needs surgical modality treatment.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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