



A CLINICO-PATHOLOGICAL STUDY OF SCROTAL SWELLINGS IN ADULTS AT TERTIARY CARE CENTRE, BANGALORE

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ABSTRACT **Introduction:** Scrotal swellings are one of the commonest clinical entities in surgical practice. Scrotal swelling has got a wide spectrum of conditions, varying from hydrocele to testicular tumours and different age groups present with different types of swellings. Therefore, there is a need to study the different swellings of the scrotum and investigate different types of scrotal swellings and arrive at the correct diagnosis and manage accordingly.

Aims & Objectives:

- 1) To study the presentation, pathology and management of different scrotal swellings.
- 2) To study the post operative complications and measures to prevent them.

Material & Methods: The study was conducted in The Department of General Surgery, Rajarajeswari Medical College and Hospital, Mysore road, Kengeri, Bangalore-74, from the period of January 2021 to August 2022, which included 50 cases in different surgical units picked randomly and study was conducted as per the proforma. **Observation Results:** Swelling was the main concern in most of the cases. Primary vaginal hydrocele was the commonest, followed by epididymo-orchitis, followed by epididymal cyst, chylocele, pyocele, spermatocele and one testicular tumour. Right side was the dominant side (72%) of presentation than the left. Most of the scrotal swellings presented in age group between 31-40 yrs (30%). **Conclusion:** From our study it can be concluded that Hydrocele is the most common cause of scrotal swelling. Minimal dissection of the tissues during surgery and good haemostasis were the important points in mind in avoiding post operative complications.

KEYWORDS :

INTRODUCTION

- Scrotal swellings are one of the commonest clinical entities in surgical practice. Though easily accessible for self examination, at times diagnosis can be missed as there are a wide spectrum of conditions, ranging from hydrocele to testicular tumours with varying age groups.
- Presentation of testicular tumours can be a diagnostic enigma and may mimic any of the presentations like epididymo-orchitis to hydrocele and so on.
- Hydrocele is the commonest cause of swellings of scrotum occurring in various age groups, usually middle or elderly age groups, common in tropical countries [1].
- Acute epididymo-orchitis is a clinical syndrome resulting from acute inflammation, pain or swelling of epididymis, along with the involvement of testis. In patients less than 35 years of age, gonococci and Chlamydia are common, while in patients more than 35 years, Escherichia coli, pseudomonas and trichomonas are common [1].
- Testicular tumours constitute 1% of all malignant tumours of male. 99% of the testicular tumours are malignant. They are most common solid tumours in young adult males between 15-35 years [2][10][11]. They arise from germ cells, which are highly sensitive to both radiation therapy and a wide variety of chemotherapeutic agents. Germinal neoplasms are primarily seminoma, teratomas, embryonal carcinoma and choriocarcinoma with an incidence of 11.3 per 1 lakh population [13]. Nongerminoma tumours such as Leydig cell tumour, Sertoli cell tumor, androblastoma and gonadoblastoma account for only 5% of tumour of testis. [1][11][12]
- There are various complications developing secondary to the scrotal swellings. It has been suggested that a large and long standing hydrocele causes certain pathological changes such as atrophy and hampers spermatogenesis [8].
- Prompt early and appropriate treatment is necessary to avoid various complications of the scrotal swellings [1].
- In view of the wide nature of scrotal swellings seen in day to day practice, there is a need to study and investigate different types of scrotal swellings and arrive at the correct diagnosis and manage accordingly.

AIMS AND OBJECTIVES

1. To study the presentation, pathology and management of different scrotal swellings.
2. To study their post operative complications and measures to prevent them.

Inclusion Criteria:

1. All adult patients with scrotal swellings.

Exclusion Criteria:

1. Paediatric age group.
2. Inguino-scrotal swellings.
3. Varicocele.
4. Lesions pertaining to the wall of the scrotum.

METHODOLOGY

- The study was conducted in The Department of General Surgery, Rajarajeswari Medical College and Hospital, Mysore road, Kengeri, Bangalore-74, from Jan 2021 to August 2022, which included 50 cases in different surgical units picked at random. The study was conducted as per the proforma.

Study Period: 20 Months

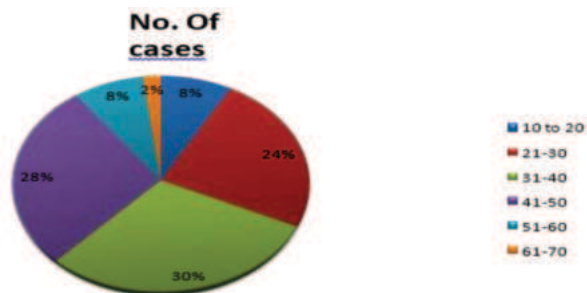
- Patients admitted with symptoms of scrotal swelling associated with pain and discomfort were studied with-
 1. Detailed history taking
 2. Clinical examination
 3. Routine Laboratory investigations.
 4. Ultrasound in all cases.
 5. Performing the surgery for the cases, noting the findings.
 6. Postoperative course and management of postoperative complications.
 7. Finally follow up was done.
- A total of 50 cases were included in the study, of which all the cases underwent surgical intervention for the disease.
- Surgical procedure tailored to the patient's condition was done under spinal anaesthesia; corrugated drain was used in a few cases. Postoperative scrotal support was given in most of the cases. Upon discharge, the patient was explained the need for follow up on an

OPD basis.

ANALYSIS OF DATA AND RESULTS

1. Age distribution of patients studied:

Age (years)	No. of cases	Percentage
10-20	4	8%
21-30	12	24%
31-40	15	30%
41-50	14	28%
51-60	4	8%
61-70	1	2%
Total	50	100%

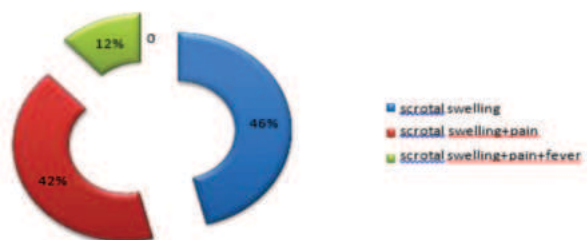


The youngest patient and oldest patients were 19 and 67 years old respectively. Maximum number of cases was seen in the age group of 31-40, 15 cases accounting for 30% of cases. Minimum number of cases was seen in the age group of 61-70, 1 case accounting for 2% of cases.

2. Presenting features:

Presenting features	No. of cases	Percentage
Scrotal swelling	23	46%
Scrotal swelling +pain	21	42%
Scrotal swelling +pain +fever	6	12%
Total	50	100%

presenting features



23 patients complained of only scrotal swelling, which accounted for 46% of cases. 21 patients complained of pain accompanied with scrotal swelling, which accounted for 42% of cases. Fever was noted in 6 patients along with scrotal swelling and pain.

3. Side of the swelling involved in patients studied:

side	No. of cases	percentage
Right	36	72%
Left	10	20%
Bilateral	4	8%
Total	50	100%

side of the swelling

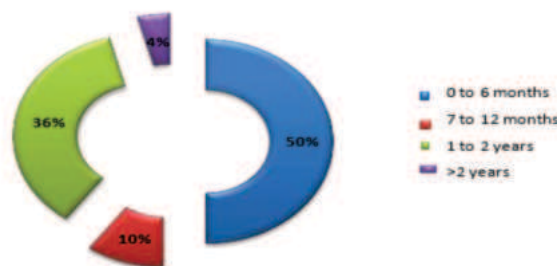


Side wise distribution of scrotal swellings indicated a higher incidence on the right side, 36 cases accounting for 72%. Whereas, left sided swellings were 10 in number, accounting for 20%; a difference of 52% was noted. Bilateral swellings were present in 4 cases accounting for 8%.

4. Duration of symptoms in patients studied:

Duration	No. of cases	Percentage
0 to 6 months	25	50%
7 to 12 months	5	10%
1 to 2 years	18	36%
2 years and above	2	4%
total	50	100%

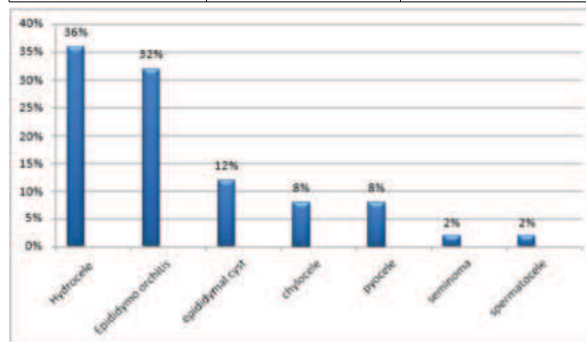
Duration of symptoms



Most of the patients presented with symptoms within 0-6 months; 25 cases accounting for 50%, followed by the 1-2 years group, 18 cases accounting for 36%. Only 2 patients presented with a duration of more than 2 years.

5. Etiology of scrotal swellings:

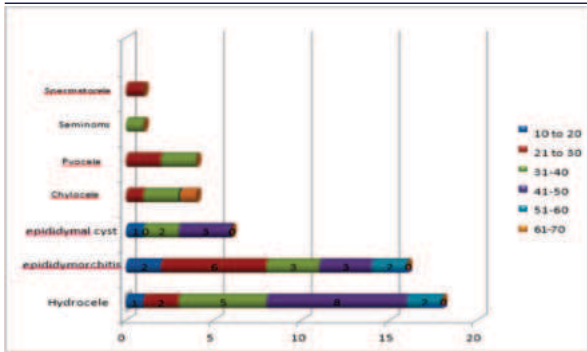
Aetiology	No. of cases	Percentage
Hydrocele	18	36%
Epididymo Orchitis	16	32%
Epididymal cyst	6	12%
chylocele	4	8%
Pyocele	4	8%
Seminoma	1	2%
Spermatocele	1	2%
Total	50	100%



Primary vaginal hydrocele was the commonest cause of scrotal swellings; 18 cases accounting for 36%, followed by epididymo-orchitis accounting for 32%, epididymal cyst accounting for 12%. 8% of cases were chylocele and Pyocele each. 1 case of testicular tumour was noted accounting for 2%.

6. Age incidence of etiological lesions studied:

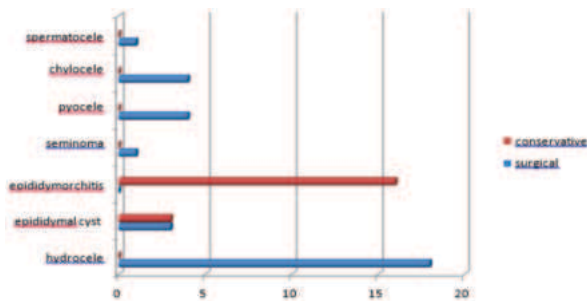
Aetiology	Age groups (years)						Cases
	10-20	21-30	31-40	41-50	51-60	61-70	
Hydrocele	1	2	5	8	2	0	18
Epididymorchitis	2	6	3	3	2	0	16
Epididymal cyst	1	0	2	3	0	0	06
Chylocele	0	1	2	0	0	1	04
Pyocele	0	2	2	0	0	0	04
Seminoma	0	1	0	0	0	0	01
Spermatocele	0	1	0	0	0	0	01
Total	4	13	14	14	4	1	50



The age distribution of hydrocele varies from 10-60 years, with maximum number of cases seen in the 41-50 year group (8 cases); 5 cases in 31-40 years age group; 6 cases of epididymo-orchitis in the age group of 21-30 years; 3 cases of epididymal cyst in the age group of 41-50 years. 1 case of testicular tumour was found in the age group of 31-40 years.

7. Modes of management for different scrotal swellings::

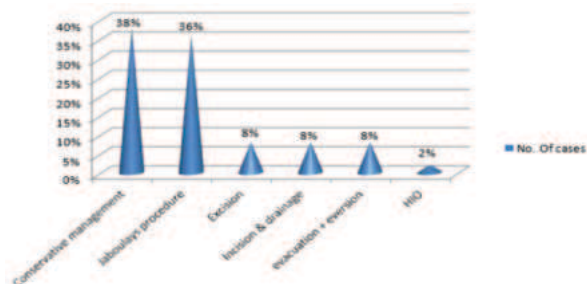
Aetiology	No. of cases	Modes of management	
		surgical	conservative
Hydrocele	18	18	00
Epididymal cyst	06	03	03
Epididymorchitis	16	00	16
Seminoma	01	01	00
Pyocele	04	04	00
Chylocele	04	04	00
Spermatocele	01	01	00
Total	50	31	19



All patients with epididymo-orchitis were managed conservatively and three out of six epididymal cysts were managed conservatively due to small size (<8mm). Incision and drainage was done for four pyocele cases. Excision was done for three epididymal cysts and one spermatocele case. High inguinal orchidectomy was performed for seminoma (testicular tumour). Jaboulay's procedure was done for all hydrocele cases. Evacuation and eversion of sac was done for chylocele cases.

8. Different surgical procedures employed for treatment of swellings:

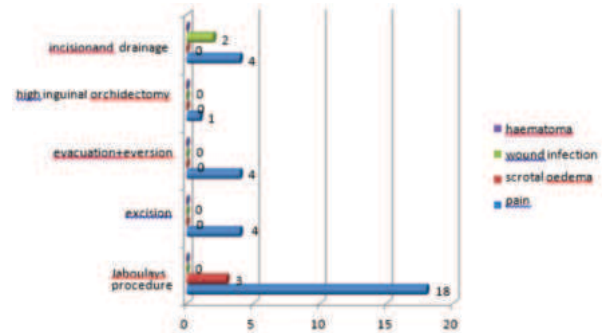
Procedure	No. of cases	Percentage
Excision	04	8%
Evacuation and eversion of sac	04	8%
Incision and drainage	04	8%
High inguinal orchidectomy	01	2%
Total	50	100%



Hydrocele was treated by Jaboulay's procedure in 18 cases. Epididymo-orchitis and few epididymal cysts were treated by conservative management. Incision and drainage was done for 4 Pyocele cases. For one testicular tumour high inguinal orchidectomy was performed. Evacuation and eversion of sac was done for 4 chylocele cases.

9. Post operative complications in present study with relation to the surgical procedure:

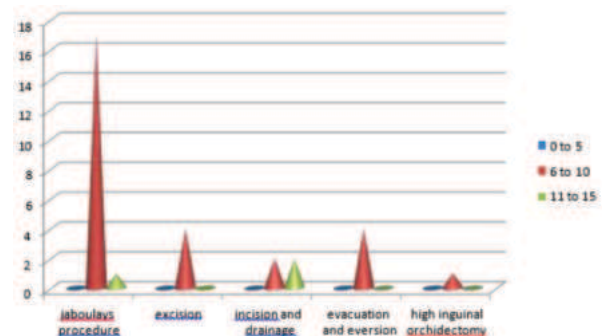
Procedure	No. of cases	Pain	Scrotal oedema	Haematoma	Wound infection
Jaboulay's procedure	18	18	03	0	0
Excision	04	04	0	0	0
Incision and drainage	04	04	0	0	02
Evacuation and eversion of sac	04	04	0	0	0
High inguinal orchidectomy	01	01	0	0	0
Total	31	31	03	00	02



Pain was present post operatively in all cases. Scrotal oedema was seen in 3 cases of hydrocele. Wound infection was seen 2 cases of pyocele.

10. Duration of post operative hospital stay:

procedure	No. of cases	No of days		
		0 to 5	6 to 10	11 to 15
Jaboulay's procedure	18	-	17	1
Excision	04	-	4	-
Incision and drainage	04	-	2	2
Evacuation and eversion	04	-	4	-
High inguinal orchidectomy	01	-	1	-
total	31	-	28	3



28 patients were discharged between 6-10 days, earliest was for excision of cysts. 3 patients were discharged between 11-15 days; late discharge was for pyocele patients as they developed wound infection after incision and drainage.

DISCUSSION

- Most of the patients were in the age group of 31 to 40 years (30%), the presenting feature being scrotal swelling as the main complaint in 46% of cases. Majority of them presented with right sided

swelling accounting for 72% of cases. Majority of the cases had duration of symptoms < 6 months, accounting for 50% of cases. However many others had scrotal swelling with pain and few presented with fever.

- Primary vaginal hydrocele was the commonest scrotal swelling (36%) followed by epididymo-orchitis.
- Vaginal Hydrocele is an abnormal collection of serous fluid in the tunica vaginalis. It occurs in men of all ages, usually middle aged and elderly men in tropical regions. Long standing Hydrocele can cause flattening or atrophy of the testes.
- Hydrocele was idiopathic in origin; Pyocele and chylocele were secondary to infection. Epididymo- orchitis was secondary to urinary tract infection in most cases.
- On examination, skin rugosity loss was seen on the affected side in majority of patients with scrotal swelling, which are cystic and fluctuant.
- Transillumination was positive in most of the cases; however Transillumination was negative in pyocele and chylocele. Hydrocele was more common on the right than left side, this observation is with respect to the study done by C. Mahalingam (1985) and Boukinda F (2003).
- The diagnosis was confirmed by Clinical examination, scrotal ultrasonography, FNAC, and urine culture in relevant cases
- Routine investigations were done for all cases. Surgical treatment was carried out in 31 cases (under spinal anaesthesia) and 19 cases were managed conservatively.
- Pain was the most common complaint post operatively. Few cases developed scrotal edema, for which scrotal support and relevant treatment was given. Few cases developed wound infection for which regular dressings were carried out.
- Acute epididymo-orchitis is an infection usually due to STD or urethritis which reaches the globus minor of epididymis via lumen of the vas, from a primary infection in urethra, prostate or the seminal vesicles.
- Acute tubercular epididymo-orchitis should be suspected when vas is thickened and there is little response to usual antibiotics
- Testicular tumours constitute 1% of all malignant tumours in males, with Seminoma (malignancy of undifferentiated germ cells) being the commonest type of testicular tumour in adults and accounts for 60-65% of all germ cell tumours of testes.
- A rare presentation of seminoma correlates with HCG production presenting as Gynaecomastia [14].
- Increased AFP virtually excludes pure seminoma [15].

Results of the present study compared to that of previous series based on etiology and age incidence:

Aetiology	No. of cases					
	Misaki T et.al (1985) 63n=101	SA Rizwi et.al (2011) 62 n=122	Mukharjee et.al (2013) 59 n=75	U Handa et.al(2016) 61 n=164	Agarwal et.al(2018) 60 n=90	Present study n=50
hydrocele	33	26	8	5	12	18
Epididymal cyst	-	-	3	3	7	6
epididymo orchitis	24	46	32	13	10	16
Spermatocele	7	-	9	25	4	1
Abscess /Pyocele/ chylo cele	4	2	1	3	3	8
Neoplasms seminoma	6	16	-	-	1	1
Highest age group incidence	-	-	21-30 yrs	31-40yrs	29-39 yrs	31-40 yrs

SUMMARY

- Fifty cases of scrotal swellings were studied in The Department of General Surgery, Rajarajeswari medical College and Hospital, Bangalore, with the aim of studying with respect to age distribution, the presentation, management and postoperative complications.
- Swelling was the main concern in most cases of swelling of the scrotum. Primary vaginal hydrocele was the commonest, followed by epididymo-orchitis, followed by epididymal cyst, chylocele, pyocele, spermatocele and testicular tumour.

- Ultrasound almost confirms the diagnosis in most cases.
- Surgical treatment was given to 62% of cases.
- Jaboulay's procedure was done for all hydrocele cases. Excision was done for cases of epididymal cysts and spermatocele. All cases of epididymo-orchitis were managed conservatively. Evacuation and eversion was done for all cases of chylocele. Incision and drainage was done for all Pyocele cases. High inguinal orchidectomy was done for testicular tumour. Hydrocele fluid was amber coloured in primary vaginal hydrocele, clear in epididymal cyst, barley white in spermatocele cases and milky white in chylocele cases.
- Among post operative complications, pain was more of a sequelae than a complication, scrotal edema was an established complication, which was treated conservatively by scrotal support and analgesics. Wound infection was managed with regular dressings.
- Patients were discharged, on an average, after 8 days. Patients were then followed up for few months (a maximum of 6 months). No recurrence was found in the follow up period.

CONCLUSION

1. Most of the scrotal swellings presented in the age group between 31 and 40 years (30%).
2. Scrotal swelling was the most common mode of presentation (46%).
3. The right side was the dominant side (72%) of presentation.
4. Most of the patients were suffering with symptoms of duration 0-6 months (50%).
5. Primary vaginal hydrocele was the commonest cause of scrotal swelling (36%).
6. Epididymo-orchitis was the second most common etiology for scrotal swelling (32%).
7. Surgery was the treatment of choice in 62% of cases.
8. Conservative management was done for 38% of cases.
9. Jaboulay's procedure was opted for in 36% of cases.
10. Average post operative stay duration was 8 days.
11. Minimal dissection of tissues and good hemostasis during surgery were the important points to be kept in mind to avoid post operative complications.

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