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Original Research Article

A clinico-pathological study and management of cystic swellings of scrotum

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ABSTRACT

Background: The cystic swellings of scrotum are one among the common surgical problem in all age group. Objective of this study is to identify the cause, mode of presentation, various modalities of treatment and outcome of these with least complications.
Methods: A total of 100 cases of cystic swellings of scrotum fulfilling the methodology criteria's were subjected to preformatted study. Final diagnosis was made with Clinical examination and Ultrasound. All 100 cases were treated surgically.
Results: Most of the patients were in age group of 20-60 years (28%), presenting feature being scrotal swelling as a main complaint in 60% of cases, majority of them were right sided (64%), majority of them presented with in a year, 40% presented with in first 6 months and 30% in next 6 months. Primary vaginal hydrocele was the commonest cystic swelling (60%), followed by epididymal cyst, sebaceous cyst, haematocoele, pyocoele. Lord's plication was the procedure, which was associated with early discharge of the patient and least post-operative complications. Most of the patients were discharged around 8th Post-operative day.
Conclusions: Primary vaginal hydrocoele was the commonest cystic swellings of scrotum. Most of the cystic swellings were treated surgically with good results. Lord's plication procedure was the least to have post-operative complication.

Keywords: Epididymal cyst, Hydrocoele, Haematocoele, Lord's plication, Pyocoele, Spermatocoele

INTRODUCTION

Cystic swellings of the scrotum are a common surgical problem. Cystic swellings of scrotum affect the physical well-being of the patient, presents as varied etiology, Since scrotum is placed outside the lower abdomen they are easily accessible for clinical examination and self-examination. The spectrum consists of hydrocoele (the commonest cause), epididymal cysts, spermatocoele, haematocoele, pyocoele, chylocoele, and sebaceous cysts.

Cystic swelling of scrotum was usually painless and can attain a very big size without causing much discomfort to patient. The mortality from this condition is negligible. The scrotum is liable to traumatic injury due to their hanging down position. Hydrocoele is an abnormal collection of serous fluid in some part of the processus vaginalis, usually the tunica.[1] It is divided into simple (scrotal) and communicating.[2]

Epididymal cysts represent cystic degeneration of the epididymis.[2] Spermatocoele is a retention cyst arising from either the vasa efferentia of the testes or from the epididymis.[3] The scrotum has abundant quantity of sebaceous glands, which may become infected and obstructed forming sebaceous cysts.

Because of the presence of hair follicles, the scrotum is one of the sites for folliculitis (boil) etc. Secondary hydrocoele occur secondary to disease of the testes and epididymis and its management consists of treatment of the underlying cause.

Filarial hydrocoele and chylocoele account for upto 80 percent of hydrocoele in some tropical countries where the parasite (Wuchereria Bancrofti) is endemic. Cystic swellings of scrotum are invariably painless and can attain very large size. The mortality from this condition is negligible.

Indications for treatment includes pain, discomfort, and the cosmetic appearance of the scrotum.[4]

Conventional treatments (for primary hydrocoele, epididymal cyst, and spermatocoele) include repeated aspiration, aspiration and injection of sclerosant or surgery. Aspiration and injection of sclerosant can cause severe pain, and simple aspiration has to be repeated and carries risk of infection and haematoma formation.[5]

The gold standard continues to be surgical extirpation of the cystic lesion.[6]

There is no specific treatment for secondary hydrocoele. Management of this condition consists of treatment of the underlying cause. Surgical treatment of idiopathic hydrocoele includes 4 basic techniques[7]

- Lord's plication
- Winkelmann's partial excision and eversion of the sac
- Jaboulay's eversion of the sac and
- Radical excision of the sac. Recent quicker operations in adult consists of the window operations or vaginal operations.[7-11]

Congenital hydrocoele are treated by herniotomy. Treatment of epididymal cyst and spermatocoele consists of the excision of the cysts.[2,3]

The complications during operations on the scrotum are bleeding, injury to the cord structures, torsion of testes due to faulty reposition. The common post-operative complications include haematoma and odema, which can be prevented by meticulous haemostasis and post-operative scrotal support.

Because of varied etiology, their mode of presentation and management is unique for each. With this background, a clinical study of cystic swellings of the scrotum was undertaken. The present study includes the review of literature regarding the classification, etiology, clinical presentation and management of cystic scrotal swellings.

A study of 100 cases of cystic swellings of scrotum is being presented here.

METHODS

The study was done in Department of Surgery, Sri Venkateshwaraa Medical Hospital and Research centre Pondicherry from July 2014-December 2016, which included 100 admitted cases in different surgical units picked randomly and study was conducted as per the proforma.

Inclusion criteria

- Patients of all age groups who are presenting with cystic swelling in scrotum
- Cystic swellings from the testes and its coverings, epididymis, spermatic cord and from scrotal skin with informed consent for the proposed surgery were included.

Exclusion criteria

- Patients with presenting testicular tumors will be excluded
- Patients with Epididymo Orchitis will be excluded.

Method of collection of data

Patients admitted with symptoms of swelling, pain, discomfort in the scrotal region were studied with facilities available in the hospital, through a proforma.

- Detailed history taking
- Clinical examination
- Routine laboratory investigations
- Ultrasound in all cases
- Performing the surgery for the cases, noting the findings
- Postoperative course and management of postoperative complications
- Finally follow up was done.

A total of 100 cases were included in the study of which all cases underwent surgical intervention for the disease.

Surgical procedure tailored to the patient's condition was done, corrugated drain was used in few cases. Postoperative scrotal support was given in most of the cases. On discharge of the patient, patient was told for the requirement of the follow up to the outpatient department.

RESULTS

Present study includes 100 cases, admitted to Sri Venkateshwaraa Medical Hospital and research centre, Pondicherry from July 2014-December 2016,

The youngest patient was 3-year-old and the oldest was 75 years. Maximum number of cases was seen in the age group between 31-40, 28 cases accounting for 28% of

cases; followed by 21-30 age group and 31-40 age group, 24 cases each accounting for 24% of cases. Minimum number of cases are seen in the age group of 51-75, 3 cases accounting 6%.

Table 1: Age incidence of the cystic swellings of the scrotum.

Age (years)	No. of cases	Percentage
10-20	24	24%
21-30	24	24%
31-40	28	28%
41-50	18	18%
51-75	6	6%
Total	100	100%

Table 2: Aetiology of cystic swellings of scrotum.

Aetiology	No. of cases	Percentage
Primary vaginal hydrocoele	60	60%
Epididymal cyst	28	28%
Sebaceous cyst	4	4%
Haematocoele	4	4%
Pyocoele	2	2%
Spermatocoele	2	2%
Total	100	100%

Primary vaginal hydrocoele was the commonest cause of cystic swellings 60 of 100 cases accounting for 60% of the study, followed by epididymal cyst, 28 cases accounting for 28%. 4 cases of haematocoele were noted and 4 cases of Sebaceous cyst of which 2 was multiple sebaceous cyst. 2 cases each of spermatocoele and pyocoele.

Table 3: Different surgical procedures employed for treatment of swellings.

Procedure	No. of cases	Percentage
Lord's Plication	40	40%
Eversion of sac	20	20%
Excision	34	34%
Evacuation of clot and eversion	4	4%
Incision and drainage	2	2%
Total	100	100%

Primary vaginal hydrocoele was treated by Lord's plication in 40 cases, Eversion of sac in 20 cases. Epididymal cyst, spermatocoele, and sebaceous cyst were excised accounting for 34 cases, of which 2 cases of multiple sebaceous cyst was treated by excision of skin and primary suturing. Evacuation of clot and eversion were done in 4 cases of haematocoele. Incision and drainage for pyocoele in 2 cases.

Pain was present postoperatively in all cases. Scrotal edema was seen in 22 cases (22%), Scrotal edema was least in Lord's Plication, when compared to other procedure for vaginal hydrocoele. Haematoma was seen in 6 cases (6%), 4 cases post eversion of sac, 2 cases in post epididymal cyst excision, and 4 cases in Evacuation of clot and Eversion of sac.

Table 4: Post-operative complications in the present study with relation to the surgical procedure.

Procedure	No. of Cases	Pain	Scrotal Oedema	Haematoma	Wound Infection
Lord's Plication	40	40	4	0	0
Eversion of sac	20	20	10	4	4
Excision	35	35	4	4	0
Evacuation of clot and	4	4	2	2	0
Eversion of sac					
Incision and Drainage	1	1	1	0	2
Total	100	100	21	10	6

DISCUSSION

Cystic swellings of the scrotum are a common surgical problem. Present study includes 100 cases with cystic swellings of scrotum, admitted to Department of Surgery, Sri Venkateshwaraa Medical Hospital and Research centre Pondicherry, India. Most of the patients were in age group of 31-40 years (28%), presenting feature being scrotal swelling as a main complaint in 60% of cases, majority of them presented with right sided swelling accounting 64%, majority of the swelling showed duration of symptoms within 6 months, accounting for 40% of the cases. However, many other had scrotal swelling with pain or pain alone as a complaint, few presented with fever.

Primary vaginal hydrocele was the commonest cystic swelling (60%), followed by epididymal cyst. Primary hydrocele is idiopathic in origin, haematocele followed

recent trauma and pyocele was secondary to infection of hydrocele.

On examination, skin rugosity loss was seen on the affected side in majority of patients with swelling, cystic and fluctuant. Transillumination was positive in most of the cases, however longstanding hydrocoele had few transillumination negative. Spermatocoele, haematocoele and pyocoele were transillumination negative. Hydrocoele was more common on the right side than left side, this observation is with respect to study done by Mahalingam C and Boukinda F.[12,13] After scrotal examination, the diagnosis was confirmed by scrotal ultrasonography in relevant cases.

Routine investigations were done for all cases. Surgical treatment was carried out in all 100 cases. Spinal anaesthesia was used in most of the cases, however General anaesthesia was used in younger age group and one failed case of spinal anaesthesia. Excisions of sebaceous cyst and epididymal cyst in few cases was done under local anaesthesia using 2% xylocaine and Midazolam. Lord's plication was the procedure found most effective, simple and carried least complication rate than any other procedure for hydrocoele.

Table 5: The results of present study compared to that of previous series.

Author	Journal	Lords Plication		Excision/eversion of sac	
		No. of cases	Haematoma	No. of cases	Haematoma
Effron et al[15]	SGO	29	01	30	09
Dahl et al[16]	Arch Surg	25	01	23	06
Reddy et al[17]	IJS	400	Negligible	-	-
Rai et al[18]	IJS	50	-	20	15
Present study	-	40	-	20	01

Table 6: Comparison of the present study with Aggarwal series.

		Lords Plication		Excision/eversion of sac		
Series	No. of cases	Haematoma	Wound infection	No. of cases	Haematoma	Wound infection
Aggarwal series[14]	50	-	-	50	14	8
Present study	40	-	-	20	1	1

Agarwal OP did a comparative study on radical cure of hydrocele. In this study, he showed that among 50 cases who were operated by Lords Placation, none of them developed haematoma or infection, where as in 50 cases who underwent, eversion of sac 14 (28%) cases developed haematoma and 8 (16%) cases developed infection. In our study, among 20 cases underwent eversion of sac only 1 case developed haematoma and 1 case developed wound infection, where as in Lords Plication none of them had haematoma and wound infection except 2 cases, which had scrotal edema.

This study shows that Lords Plication for hydrocele is simple, effective, safe and economical. It is the procedure of choice for management of small to moderte sized primary hydrocele. The only factor against to this procedure is a large hydrocele or a thick walled hydrocoele, where eversion of sac is the operation of choice. The post-operative complication apart from pain, which was common in all patients was some sequelae, scrotal odema was found in 11 patients and haematoma post operatively in 3 cases, This was the result of sac separation and dissection. This was least in Lord's plication, because procedure avoids the opening of the cleavage between the sac and surrounding tissue, thus reducing the oozing and subsequent haematoma formation and thus less post op complication and early discharge from the hospital. However, this procedure is barred in long standing large hydrocoele with thick sac, where in eversion of sac was chosen.

Epididymal cyst was the second most common cystic swelling treated by excision few were done under local and were discharged within 5 days. Similarly, spermatocoele was seen in one patient was treated by excision. Haematoma was treated by evacuation and eversion of the sac. Pyocoele was treated by Incision and Drainage and under suitable antibiotics. Drain was kept as per the decision by the surgeon in few cases and was removed within 24-48 hours. All the cases were given tight scrotal support and appropriate antibiotics and analgesics, it helps to relieve pain, reduces edema and haematoma. Post-operative complications were managed conservatively with antibiotics, analgesics and scrotal support.

Hydrocoele fluid was amber coloured in primary vaginal hydrocoele, clear in epididymal cyst, haemorrhagic fluid was seen in two cases- haematocoele. Most of the patient was discharged between 6-10 days. but some patients who developed scrotal edema and infection were kept till 11-15 days.

Patients were then followed up for 2-4 months, there was no recurrence of lesion in the patients followed up during this period. Limitations of this study was, study does not include inguinoscrotal swellings like, Congenital hydrocoele, Funicular hydrocoele, Filarial hydrocoele, Infantile hydrocoele. Most of the patients are from rural setup, illiteracy and ignorance was the problem in follow-up of the patients.

CONCLUSION

Majority of the patients with cystic swelling of the scrotum belonged to the 31-40 years of age group 28% followed by 11-20 years and 21-30 years of age group 24% each. Scrotal swelling was the common mode of presentation (60%). Right side was dominant side of presentation than the left with a difference of 40%. Most of the patients were suffering with symptoms of duration 0-6 months (40%). Primary vaginal hydrocoele was the commonest cause of cystic swelling of scrotum (60%). Primary Vaginal hydrocele of long duration can produce pressure effects on the testis. Lord's procedure carried least complication and less postoperative stay than any other procedure in treatment of primary vaginal hydrocoele. Minimal dissection of the tissues during surgery and good haemostasis are the key to pevent post-operative complications. Postoperative stay duration, average was 8 days. There was no recurrence of lesion in the patients followed up during 2-4 months.

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