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Original Research Article

Clinical study of the management of scrotal swelling in adult patients at a rural medical college and research hospital

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ABSTRACT

Background: Scrotal swellings are commonest clinical entities in surgical practice. Hydrocele is abnormal collection of serous fluid in the tunica vaginalis or any part of the processus vaginalis, which needs to be differentiated from other conditions and surgically managed.
Methods: This prospective, observational study was carried out on 90 adult male patients between January 2021 to August 2021 diagnosed with scrotal swelling, admitted, treated at MVJMC and RH. Inclusion criteria were male patients of age >18 years. Exclusion criteria were patients with paediatric scrotal swellings. Routine blood investigations, COVID test and ultrasound of the scrotum was done. The patients underwent one of the standard surgical procedures and were observed for post-operative complications during their stay at the hospital and were followed up for 3 months. The collected data was analyzed using SPSS-21 software.
Results: Collected data was analysed using SPSS-21. In our study hydrocele was seen in 48 (53.33%), epididymo-orchitis 5 (5.56%). 3 (3.33%) cases of varicocele, 2 (2.22%) cases of epididymal cyst and 1 (1.11%) each of sebaceous cyst, spermatocele, hematocele, sebaceous cyst, Fournier's gangrene, infected encysted hydrocele, pyocele, scrotal abscess and filarial hydrocele. 2 (2.22%) testicular tumour and 21 (23.86%) testicular torsion. Of 90 patients 81 (90%) underwent surgery, while 9 (10%) patients were managed conservatively.
Conclusions: Primary vaginal hydrocele was the commonest scrotal swelling. Ultrasound of the scrotum is diagnostic tool in differentiating from other swellings in the scrotum especially in testicular torsion when the testis can be saved. Jaboulay's procedure was the commonest surgery performed with least complications.

Keywords: Scrotal swelling, Primary vaginal hydrocele, Varicocele, Jaboulay's procedure

INTRODUCTION

Scrotal swellings is one of the common problems in all age groups. Various etiologies makes it mandatory to differentiate it and help in the surgical or conservative line of management. Scrotal swellings are one of the commonest clinical entities one comes across in surgical practice.[3,4] Hydrocele, the commonest scrotal swelling, is abnormal collection of serous fluid in the tunica vaginalis or any part of the processus vaginalis.[1,5-7]

Scrotal filariasis occurs due to infection by the *W. bancrofti*. Fournier's gangrene of scrotum is a condition thought to be caused by obliterative endarteritis of scrotal vessels with super infection.[2,8,9] Testicular tumours, although constitute only 1-2% of the malignancies in the male are curable if diagnosed early with specific tumour markers, radiological and the chemotherapeutic agents. Testicular torsions when diagnosed early within six hours can be managed by exploration and orchidopexy.[10-12]

Objectives

The objective of this study was to determine the etiology for different scrotal swellings, different types and modes of clinical presentation of scrotal swellings, investigations and treatment modalities offered and the outcomes.

METHODS

This prospective observational study was conducted in 90 cases of scrotal swellings admitted and treated accordingly at MVJ Medical College and Research Hospital between January 2021 to August 2021.

Ethical approval was taken from the institution.

Inclusion criteria were male patients who were >18 years presenting with scrotal swelling. Paediatric patients with scrotal swellings were excluded.

Written informed consent was taken from patients who agreed to participate in study. Patient's datasheet included the demography, presenting chief complaints, with history of presenting illness, past history, personal history and family history and local examination findings were recorded on the proforma. Routine blood investigations like CBC, haemoglobin, TC, ESR, RFT, LFT, AEC, HIV, HbsAg and DC were done along with specific investigations/ultrasonography of abdomen and scrotum was done. The various treatment modalities done were also documented.

Then any one of the standard procedures was performed on the patient according to the diagnosis: (1) Jaboulay's procedure for large hydroceles-incision of sac, evacuation of fluid and eversion of the sac; (2) Lord's plication for small hydroceles- incision of the sac, evacuation of fluid and plication; (3) incision and drainage-for abscess; (4) bilateral orchidopexy-for torsion of testis; (5) orchidectomy-for non-viable testis/tumour; (6) varicocelectomy-for varicocele; (7) debridement-for Fournier's gangrene; (8) medical management-for epididymoorchitis; (9) excision of cyst-for epididymal cyst and encysted hydrocele of cord. The patient were observed for post-operative complications during his period of stay at the hospital. After discharge the patient were followed up after 1 week, 1 month and at the end of 2 months. The collected data was analysed using SPSS 21 software and tabulated.

RESULTS

The collected data was analysed using SPSS 21 software and documented. Some of the patients also had swelling 90 (100%), fever 22 (24.44%), pain 21 (23.33%) and urinary symptoms 3(3.33%) (Table 1). In our study, maximum number of cases were observed in the age group 18-28 years were 32 (35.56%), followed by 28-38 years were 29 (32.22%) and 38-48 years were 13 (14.44%), followed up by 48-58 years were 6 (6.67%), 58-68 years were 7 (7.78%) and 68-78 years were 3 (3.33%) (Table 2). In our study we noted that scrotal swellings those presented between 0-7 days were 24 (26.67%), followed by 7 months-1 year with 18 (20%) and more than 1 year 17 (18.89%), followed by 1-3 months 15 (16.67%) and 4-6 months 11 (12.22%) and 8-30 days 5 (5.56%) (Table 3).

Table 1: Showing clinical presentation.

Chief complaint	N	%
Swelling	90	100
Pain	21	23.33
Urinary symptoms	3	3.33
Fever	22	24.44

Table 2: Showing age wise presenting of scrotal swellings.

Age group (years)	N	%
18-28	32	35.56
28-38	29	32.22
38-48	13	14.44
48-58	6	6.67
58-68	7	7.78
68-78	3	3.33
Total	90	100

Table 3: Showing duration of scrotal swellings.

Duration (years)	N	%
0-7 days	24	26.67
8-30 days	5	5.56
1-3 months	15	16.67
4-6 months	11	12.22
7 months-1 year	18	20.00
More than 1 year	17	18.89
Total	90	100

We made a clinical diagnosis of hydrocele, epididymo-orchitis, torsion testis, varicocele, scrotal abscess and sebaceous cyst (Table 4). We noted that right sided scrotal swelling was present in 48 (53.33%) patients. Left sided scrotal swelling was seen in 34 (37.78%) while bilateral scrotal swelling constituted only 8 (8.89%) (Table 5).

Upon USG screening hydrocele was seen in 50 cases (55.56%), 5 cases were diagnosed with epididymo-orchitis (5.56%), testicular torsion 21 (23.33%), epididymal cyst 2 (2.22%), varicocele was observed in 3 (3.33%), 1 (1.11%) case each of spermatocele, hematocele, pyocele, encysted hydrocele and 2 (2.22%) of testicular tumour were noted (Table 6). In our study 81 (91%) patients underwent surgeries elective 57 (70.37%) and emergency 25 (29.63%) and 9 (10%) were managed conservatively (Table 7 and 8). Of the 81 (90%) patients, 44 (48.89%) underwent hydrocele Jaboulay's, 3 (3.33%) lord's plication, 1 (1.11%) subtotal excision of the sac and 2 (2.22%) excision of epididymal cyst. Orchidectomy was

done in 6 (6.67%) patients while 17 (18.89%) patients underwent exploration and orchidopexy. 3 (3.33%) patients underwent excision, 3 (3.33%) patients varicocelectomy (Table 9).

Table 4: Showing diagnosis of scrotal swellings.

Diagnosis	N	%
Hydrocele	48	53.33
Infected encysted hydrocele	1	1.11
Epididymo orchitis	5	5.56
Pyocele	1	1.11
Varicocele	3	3.33
Epididymal cyst	2	2.22
Torsion of testis	21	23.33
Fournier's gangrene	1	1.11
Testicular tumour	2	2.22
Scrotal abscess	1	1.11
Sebaceous cyst	1	1.11
Haematocele	1	1.11
Spermatocele	1	1.11
Filariasis hydrocele	2	2.22
Total	90	100

Table 5: Showing side of occurrence of scrotal swellings.

Side of occurrence	N	%
Right sided	48	53.33
Left sided	34	37.78
Bilateral	8	8.89
Total	90	100

Table 6: Showing ultrasonography findings.

Findings	N	%
Epididymo-orchitis	5	5.56
Testicular torsion	21	23.33
Hydrocele	50	55.56
Epididymal cyst	2	2.22
Spermatocele	1	1.11
Hematocele	1	1.11
Varicocele	3	3.33
Pyocele	1	1.11
Testicular tumour	2	2.22
Not advised	3	3.33
Encysted hydrocele	1	1.11
Epididymo-orchitis	5	5.56
Total	90	100

Table 7: Showing management of scrotal swellings.

Nature	N	%
Conservative management	9	10
Surgical management	81	90
Total	90	100

Table 8: Showing emergency and elective surgeries done.

Cases operated	Elective	Emergency
81	57	24
%	70.37	29.63

Table 9: Showing diagnosis of scrotal swellings.

Operation done	N	%
Jaboulay's technique	44	48.89
Lord's technique	3	3.33
Varicocelectomy	3	3.33
Orchidectomy	6	6.67
Exploration and orchidopexy	17	18.89
Incision and drainage	2	2.22
Subtotal excision	1	1.11
Excision of cyst	2	2.22
Excision and vy plasty	1	1.11
Conservative management	7	7.78
Debridement	2	2.22
Filariasis treatment	2	2.22
Total	90	100

DISCUSSION

Scrotal swellings is one of the common problems in all age groups. Various etiologies makes it mandatory to differentiate it and help in the surgical or conservative line of management. Scrotal swellings are one of the commonest clinical entities one comes across in surgical practice.[3,4] Hydrocele, the commonest scrotal swelling, is abnormal collection of serous fluid in the tunica vaginalis or any part of the processus vaginalis.[1,5-7] Scrotal filariasis occurs due to infection by the *W. bancrofti*. Fournier's gangrene of scrotum is a condition thought to be caused by obliterative endarteritis of scrotal vessels with super infection.[2,8,9] Testicular tumours, although constitute only 1-2% of the malignancies in the male are curable if diagnosed early with specific tumour markers, radiological and the chemotherapeutic agents. Testicular torsions when diagnosed early within six hours can be managed by exploration and orchidopexy.[10-12]

In our study, maximum number of cases were observed in the age group 18-28 years were 32 (35.56%), followed by 28-38 were 29 (32.22%) and were 38-48 years 13 were (14.44%), followed up by 48-58 years were 6 (6.67%), 58-68 years were 7 (7.78%) and 68-78 years were 3 (3.33%) (Table 2). In the study conducted by Chauhan et al maximum incidence of patients was in the age group of 21-30 years (41%) followed by 31-40 (18%) and 41-50 years (13%).[1] Borah et al found that highest number of cases were in the age group of 31-40 years (29%) followed by 21-30 years (27%).[2] In our study we noted that scrotal swellings those presented between 0-7 days were 24 (26.67%), followed by 7 months-1 year with 18 (20%) and more than 1 year 17 (18.89%), followed by 1-3 months

were 15 (16.67%) and 4-6 months were 11 (12.22%) and 8-30 days were 5 (5.56%) (Table 3).

We noted that right sided scrotal swelling was present in 48 (53.33%) patients. Left sided scrotal swelling was seen in 34 (37.78%) while bilateral scrotal swelling constituted only 8 (8.89%) (Table 5). Our findings are comparable to those of Patel et al who observed right sided scrotal swelling among 59 % cases, left sided in 39% and bilateral scrotal swelling in 2% while in our study we recorded 8.89% of bilateral scrotal swellings.[3] We made a clinical diagnosis of hydrocele, epididymo-orchitis, torsion testis, varicocele, scrotal abscess and sebaceous cyst (Table 4). Some of the patients also had swelling 90 (100%), fever 22 (24.44%), pain 21 (23.33%) and urinary symptoms 3 (3.33%) (Table 1).

In the present study, ultrasonography of scrotum was advised in 87 patients and not done in 3 cases (Fournier's gangrene, sebaceous cyst, scrotal abscess). Upon USG screening hydrocele was seen in 50 cases (55.56%), 5 cases were diagnosed with epididymo-orchitis (5.56%), testicular torsion 21 (23.33%), epididymal cyst 2 (2.22%), varicocele was observed in 3 (3.33%), 1 (1.11%) case each of spermatocele, hematocele, pyocele, encysted hydrocele and 2 (2.22%) of testicular tumour were noted (Table 6). In the study conducted by Pasoriya et al ultrasound showed hydrocele in 31.91% cases followed by epididymoorchitis (27.65%) and varicocele (10.63%).[4] In our study 81 (91%) patients underwent surgeries elective 57 (70.37%) and emergency 25 (29.63%) and 9 (10%) were managed conservatively (Table 7 and 8). Of the 81 (90%) patients, 44 (48.89%) underwent hydrocele Jaboulay's, 3 (3.33%) lord's plication, 1 (1.11%) subtotal excision of the sac and 2 (2.22%) excision of epididymal cyst. Orchidectomy was done in 6 (6.67%) patients while 17 (18.89%) patients underwent exploration and orchidopexy. 3 (3.33%) patients underwent excision, 3 (3.33%) patients varicocelectomy (Table 9). All patients were followed up for 3 months with no complications.

Limitation

Due to the present scenario of COVID the sample size was small.

CONCLUSION

Primary vaginal hydrocele was the commonest scrotal swelling. Ultrasound of the scrotum can be a diagnostic tool in differentiating from the other swellings in the scrotum and specially in testicular torsion when the testis can be saved. Jaboulay's procedure is the simple surgery performed with least complications and better outcome.

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