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Original Research Article

CLINICO – PATHOLOGICAL EVALUATION OF SCROTAL SWELLINGS

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ABSTRACT

Background: The testicles play two important roles: they produce sperm cells used in reproduction, and they secrete hormones such as testosterone that play a key role in male body development. The objective is to find the relative incidence of different diseases which present as scrotal swellings in the local population in and around Pune and to evaluate different clinical and pathological diagnostic methods.

Materials and Methods: A clinico pathological study of scrotal swellings was conducted in the Dept of Surgery of a large tertiary care centre.

Results: Scrotal swellings were found to be more common in the age group of 21-40 years (55%). They were also found to be more prevalent among manual workers (48%). The left hemiscrotum was more commonly affected (48%) and 16% of swellings were bilateral. The commonest disease that presented as scrotal swelling was hydrocele (60%), followed by varicoceles (12%), testicular tumors (8%). epididymo-orchitis (6%), Fournier's gangrene (5%), torsion of testis. The use of ultrasonography greatly helped in confirming the clinical diagnosis. This should be considered an extension of clinical methods. FNAC, histo-pathological examination and hydrocele fluid analysis helped in diagnosis as well as to find out etiology of the disease.

Conclusion: More experience with ultrasonography, FNAC and other modern imaging modalities like colour Doppler ultrasonography and testicular scan, which are all user-dependent, is likely to augment the practicing surgeon's armamentarium and improve his preoperative diagnostic accuracy of patients presenting with scrotal swellings.

Keywords: Incidence, scrotal swellings, ultrasonography, FNAC.

INTRODUCTION

The testicles location in the scrotum, a pouch outside the pelvic area, keeps them at a temperature lower than that within the abdominal cavity. The lower temperature is needed for adequate sperm production. The relatively exposed location of the testicles and scrotum makes them prone to injuries, but it also makes them easy to examine for potentially life-threatening problems, such as cancer. Scrotal swellings made up of fluid or solid material in, on or around the testicles may be a sign of something as serious as cancer, or may indicate a less serious or harmless condition. One can develop a scrotal mass at any age.[1]

Scrotal swellings can take origin from various scrotal contents like testis, spermatic cord, epididymis, pampiniform plexus or even subcutaneous tissue & skin. Many a time a patient with hernia may present as a scrotal swelling. However, hernias are not included in this study, as they are not arising from scrotal contents.[2]

Despite easy accessibility of scrotum and its contents for thorough clinical examination, the correct assessment of scrotal mass at times can be diagnostic challenge even to the most experienced surgeon. Tumors growing within the testicles most often are malignant, whereas those located elsewhere within the scrotum are usually benign.

Diagnostic failure to differentiate between acute epididymo-orchitis from torsion of testis may result in loss of testis. Several techniques are available to evaluate the scrotal mass eg. ultrasound, testicular scanning, Doppler flowmeter studies, color doppler

ultrasonography and FNAC. However, these facilities are not commonly available and require professional expertise.
Hence clinico-pahtological evaluation plays a very important role in the diagnosis of scrotal swellings.

MATERIALS AND METHODS

It was a prospective study, which was conducted in a tertiary level service hospital: 100 consecutive patients reporting to this hospital with scrotal swellings between Jan 03 to Dec 04 were evaluated
All male patients presenting with scrotal swelling, irrespective of their age were considered.
Though cases of complete inguinal hernia also presented with scrotal swelting but they were not included in study, as hernias do not arise from contents of scrotum.
All cases were evaluated in the following sequence. Particulars of the patient, detailed history physical examination with particular attention to scrotum and preliminary investigations were carried out. A provisional diagnosis was arrived at.
Out of 100 cases 16 were subjected to ultrasonography of scrotum for diagnostic purpose, 9 patients whom testicular tumor were suspected, 6 patients of epididymo-orchitis and one of torsion of testis.
Few more patients were subjected to USG and Colour Doppler for academic purpose but diagnosis was made clinically.
FNAC was carried out in 6 cases using 22-gauge needle out of which 4 cases of testicular tumor and 2 of chronic epididymo-orchitis.
HPE was done in 59 patients as follows-

- 45 cases of hydrocele in which tunica vaginalis was sent
- 8 cases of testicular/ paratesticular tumor in which testis was sent
- 3 case of epididymal cyst
- 1 cases each of hematocele, torsion testis and chronic epididymo-orchitis.

Hydrocele fluid analysis was done in 45 cases of hydrocele.
Pus culture and sensitivity was done in 8 patients.
Urine culture was done in suspected 7 epididymo-orchitis cases.
Work up for tuberculosis was done in 2 cases of chronic epididymo-orchitis in form of Mx test, ESR, ELISA for TB, and chest x-ray.
The clinical diagnosis was modified or confirmed in light of above-mentioned pathological investigations.

RESULTS

The age of the patients varied from 2 years (congenital hydrocele) to 71 years [Fournier's gangrene). The maximum incidence was in the age group 21-40 years. The incidence was 14% among those over 51 years.

Table 1: Age of patient

S.N	Age in years	No pf Patients	Percentage
1.	0-10	10	10
2.	11-20	11	11
3.	21-30	34	34
4.	31-40	21	21
5.	41-50	10	10
6.	51 & above	14	14

Although study was carried out at Pune but Maharashtra contributed only 38% of cases while Bihar, UP and MP contributed 37%. This shows migration of population. Maximum number of patients was a manual worker.
In this study only 9 patients gave history of similar illness in the family of which 7 were vaginal hydroceles and 2 were congenital hydroceles. 2 patients of testicular tumor gave history of cancer in one of the family member of previous generation. No familial tendency was found in other patients of scrotal swelling.
5 patients gave history of inguinal hernia operated, 9 patients of hydrocele gave history of trivial trauma in past. 20 patients past history were suggestive of filariasis.
16 patients were having co morbidity of chronic illness like hypertension, diabetes & pulmonary tuberculosis [Table 2].

Table 2: Co-morbidity of chronic illness

S. No	Disease	No pf Patients
1.	Hypertension	10
2.	Diabetes	3
3.	Tuberculosis	3
4.	Hernia	5
5.	Trauma	9
6.	Filariasis	20
7.	None	50

7 patients were having associated BPH on medical treatment, 5 patients of hydrocele were having associated inguinal hernia which was taken care of simultaneously. 2 patients of varicocele were having renal cell carcinoma (RCC) they were treated for RCC and varicocele subsided postoperatively.
In addition to swelling of scrotum, the next commonest symptom was discomfort and dragging pain [40%]. Pain and fever were present in 10% cases of inflammatory swelling. 7 patients were presented as acute pain in scrotum (6 were having epididymo-orchitis and one was torsion of testis). History suggestive f UTI was present in 5 patients (Table 3).

Table 3: Presenting symptoms

S.No	Symptoms	No of Patients
1.	Scrotal Swelling	100
2.	Discomfort & Dragging Pain	40
3.	Acute Pain	7
4.	Fever	10
5.	Cough	2
6.	Urinary Complaints	5
	Total	100

Duration of symptoms varied from as short as 1 day to as long as 13 years. Patients with acute inflammatory conditions and infective disease presented within week, whereas those with hydrocele presented within few months to many years. The longest duration in this study was an elderly man with hydrocele of 13 years duration (Table 4).

Table 4: Duration of symptoms

S.No	Duration	No of Patients
1.	1 Day to 1 Week	14
2.	1 Week to 12 Months	10
3.	1 Year to 2 Year	35
4.	> 2 Years	41
	Total	100

Side of the disease: The findings were suggestive of a left sided predominance. 48% was left side and 36% right side. The bilateral swellings included 7 patients with hydrocele, 2 patients of varicocele, 5 cases of fournier's gangrene and 2 cases of scrotal abscess (Table 5).

Table 5: side

S.No	Disease	Right side	Left side	Bilateral	Total
1.	Vaginal Hydrocele	16	22	7	45
2.	Congenital Hydrocele	4	6	-	10
3.	Encysted Hydrocele Of Cord	3	2	-	5
4.	Pyocele	2	-	-	2
5.	Epididymal	1	2	-	3
6.	Varicocele Cyst	-	10	2	12
7.	Torsion	1	-	-	1
8.	Hematocele	1	-	-	1
9.	Epididymoorchitis	4	2	-	6
10.	Scrotal Abscess	-	-	2	2
11.	Fournier's Gangrene	-	-	5	5
12.	Testicular Tumor	4	4	-	8
	Total	36	48	16	100

Maximum number of patients had small size scrotal swelling (63%). Fluctuation test was positive in 65 patients that include hydrocele, encysted hydrocele of cord, epididymal cyst, pyocele, and cases of congenital hydrocele. Transillumination test was positive in only 59 patients. It was negative in pyocele and four cases of long standing hydrocele. The scrotal skin was thickened in 2 cases and inflamed in scrotal abscess, pyocele and 5 cases of Fournier's gangrene.
The testis was enlarged in 9 patients, which included testicular tumors and a case of hematocele. It was not palpable in most of the hydrocele patients, torsion of testis [due to extreme tenderness], Fournier's gangrene and scrotal abscess. The epididymis was enlarged in 9 patients and the spermatic cord had the feel of bag of worms in all the cases of varicocele. Cord was thickened in 21 cases. All were treated with a course of antifilarial treatment. Inguinal lymph nodes were palpable in 10 cases of inflammatory swelling (Table 6).

Table 6: Clinical Findings

S. No	Clinical Findings		No. of patients
1.	Size of scrotal swelling	Small (<10 cms)	63
		Medium (10-15 cms)	22

		Large (> 15 cms)	15
2.	Tenderness	Mild	9
		Severe	12
		Nontender	79
3.	Fluctuation test	Positive	65
		Negative	35
4.	Trans-illuminatin	Positive	59
		Negative	41
5.	Scrotal Skin	Thickened	2
		Normal	89
		Excoriated	9
6.	Testis	Normal	36
		Enlarged	9
		Not palpable	55
7.	Epididymis	Normal	31
		Enlarged	9
		Not palpable	60
8.	Cord	Normal	64
		Thickened	21
		Like bag of worms	12
		Cystic Swelling	3
9.	Inguinal lymph mode	Palpable	10

Based on the above clinical findings, provisional diagnosis was arrived at (Table 7). Hydrocele was found to be the commonest scrotal swelling [60%] followed by varicocele [12%], testicular tumor [9%] and epididymo-orchitis [6%]. Clinically hematocele was diagnosed as a case of testicular tumor and epididymal cysts could not be differentiated from spermatocele. The Fournier's gangrene was dramatic in its presentation and needed emergency operation, one case in which perineum was also involved needed diversion colostomy. One case of torsion testis could be diagnosed later only.

Table 7: Clinical diagnosis

S. No	Diagnosis	No of Patients
1.	Inflammatory Swelling	16
	(a) Fournier's Gangrene	5
	(b) Scrotal abscess	2
	(c) Epididymo-orchitis	6
	(d) Pyocele	2
	(e) Torsion of testis	1
2.	Vaginal Hydrocele	45
3.	Congenital Hydrocele	10
4.	Encysted Hydrocele Of The Cord	5
5.	Epididymal Cyst	3
6.	Testicular Tumor	9
7.	Varicocele	12
	Total	100

On the basis of clinical diagnosis, laboratory investigations were ordered and the results were noted. Total leucocytes count was elevated [12000-15000/cumm] in 6 patients, 3 patients with epididymo-orchitis and also in pyocele, Fournier's gangrene and scrotal abscess (one patient cach). Eosinophilia was seen in 5 patients with vaginal hydrocele. Urine culture was done in 4 patients, which showed pus cells in routine examination of which 3 had grown E. coli sensitive to norfloxacin, furadantin. Pus for culture was sent from 8 patients; pyocele, Fournier's gangrene and scrotal abscess. 3 had Staphylococcs aureus, 5 samples had mixed growth. 6 patients were subjected to FNAC (4 cases of testicular tumor and 2 cases of chronic epididymo-orchitis.nSpecial investigations were carried out in selective patients, like USG, Doppler study. Other imaging like x-ray chest, CT scan abdomen and thorax were carried out in certain cases.

93 patients were subjected to operative treatment out of which 7 cases of bilateral hydrocele. Analysis of hydrocele fluid was carried out in 45 patients and finding observed was as under

Specific Gravity: 1018-1028

Protein: 3.48 – 5.11 (amber/ clear fluid)

3.08 – 7.36 (Chylus)

Cells usually none

Microfilaria present in 2 cases

All the patients subjected to operation tissue sent for histopathological examination. one case of paratesticular tumor turned out to be a clinical suprise, which could be diagnosed by pathological support only.

Table 8: Histo-pathological report

S. No	Disease	Tissue sent	Histo-path Report	No. of patients
1	Hydrocele	Tunica	Total	45
			Normal	39
			Chronic non-specific inf.	3
			Dead microfilaria	3
2	Testicular tumor	Testis	Total	8
			Seminoma	4
			Teratoma	2
			Embryonal ca.	1
			Paratesticular malignant mesothelioma	1
3	Hematocele	Testis	Non specific inflammation with atrophied testis	1
4	Ch. Epididymo-orchitis	Testis with epididymis	Tubercular	1
5	Torsion of testis	Testis	Necrosed testis	1
6	Epididymal cyst	Cyst	Epididymal cyst	3

The final diagnosis compared with clinical diagnosis. Both tallied in most of the cases (96%) except shown in Table 9.

Table 9: Final diagnosis

S. No	Clinical diagnosis	Final diagnosis	No. of patients
1	Epididymo-orchitis	Torsion testis	1
2	Testicular tumor	Hematocele	1
3	Spermatocele/ epididymal cyst	Epididymal cyst	2

DISCUSSION

Many studies have dealt with the differential diagnosis of the scrotal mass. However, only a few studies have looked into the incidence of different diseases presenting as scrotal swelling. Hydroceles and inflammatory swelling together (61%) accounted for 2/3 of the scrotal swelling. This is in conformity with the finding of Macksood et al.[2]

However, in the present study the incidence of hydrocele was much higher (60%) compared with macksood et al (23.7%). This was probably due to increased prevalence of filariasis in our country. The age distribution of patients ranged from 1 year in child with congenital hydrocele to 71 years in an elderly patient with Fournier's gangrene. All the patients with congenital hydrocele were below 10 years.

Majority of patients with hydrocele, varicocele, epididymo-orchitis were below 40 years age and the finding correlate with that of Macksood et al.[2]

The testicular tumors were most common in the age group of 21-40 years (5 out of 8 cases). Similar observations were made by Collins and Pugh (1964) also.[3]

The left hemiscrotum was affected in 48% of the cases. Varicoceles almost uniformly occurred on the left side only (10 out of 12 cases) (2 cases were bilateral). The congenital hydrocele, testicular tumors and epididymoorchitis were almost equally distributed between both sides. Jordan Jr found varicocele on left side in 98% cases and Mody et al series (1975) 82% cases were on left side.[4]

Macksood and James [78] found hydrocele to be evenly distributed between the right and left sides. However, in this study there was a slight left sided predominance (50% over left side against 35% over right side and the rest were bilateral). Of the 100 cases, bilateral involvement of the scrotum was seen in 7 cases with hydrocele, Fournier's gangrene 5 cases scrotal abscess and varicocele 2 cases each.

This was the commonest cause of scrotal swelling (45%) and all the age groups were affected. However, it was uncommon before 20 years and only 6 out of 45 cases were seen below 20 years in present study. In these 6 patients diagnosis was relied upon the parent's giving history that there was no change in the size of scrotal swelling during the day. Otherwise clinically there was no difference between congenital hydrocele in children, except that congenital hydroceles were usually smaller in size and less tense.

All the swelling were fluctuant, and except for 4 patients who had thickened tunica, the transillumination was also positive. Diagnostic accuracy was 100% by clinical method alone. This was in concurrence with the findings of Macksood et al and Dedhia et al.[1,2]

The hydrocele fluid on analysis showed specific gravity to be between 1018 and 1028 and proteins 3.48 to 7.36 gm%. This tallied with the findings of Dedhia et al (1982).[9] The histopathology of the tunica vaginalis showed nonspecific chronic inflammatory changes only and 3 samples were suspected of dead microfilaria. Two patients had microfilaria in the hydrocele fluid, 3 had chylus fluid, meeting the absolute criteria to call it of definite filarial aetiology. 1 In Dedhia's series, out of 63 cases of hydrocele 2 patients had Chylus fluid.1 These patients were given antifilarial drugs also postoperatively.

7 patients had bilateral moderate sized hydrocele. One had associated right-sided complete inguinal hernia and 4 other cases of hydrocele had associated opposite side inguinal hernia. These problems were dealt within the same sitting.

All the patients were operated upon by trans scrotal approach, either lord's plication, eversion of sac or Sharma and Jhawer's minimal dissection technique. Postoperative recovery was uneventful in all cases except for 4 patients who had superficial wound infection.

Congenital hydrocele accounted for 10 cases and all ten were below 10 years. All of them had small scrotal swelling only i.e. 4-10 cm. The swelling were all fluctuant transilluminant and in 4 cases the testis could be palpable also. The diagnosis was based upon the history given by the parents, regarding the reduction in size of the swelling on recumbency and increase in the size during the day. Two patient had family history i.e. another elder brother also had been operated upon earlier for congenital hydrocele. An anecdotal reference of 3 generation of hydrocele had been described by Wallace.5 One patient who presented with congenital inguinal hernia and associated hydrocele of the hernia sac was not included in this study.

All the patients underwent herniotomy by inguinal approach and the distal part of the processus vaginalis was left open. There was no recurrence in the follow up.

In this study 5 patients were seen and they were aged 18 to 35. The duration of the swelling were 1-3 months and the swelling were small, fluctuant and transilluminant. They all were diagnosed correctly by 'traction test. All were excised. The cord structures were normal in all the cases.

Varicocele

In this study, there were 12 patients with varicocele comprising 12% of total cases. 10 were on left side only and two were bilateral. This was similar to the findings of Jordan Jr (1965) who found 98% of the varicoceles to be on left side. The left side predominance was noted by Mody et al also (82%).[4]

All the 12 patients were between 13-30 years. This was similar to the finding of Macksood et al.[2] The age and side distribution in different series.[2,4,6]

The predominant symptoms were swelling and a vague dragging pain in the hemiscrotum. 4 patients were totally asymptomatic and the problem was brought to their notice only during medical examination for recruitment into services. Similarly, approximately 30% of patients in series of Mody et al were asymptomatic and found to have varicocele only during investigation for sterility. The percentage of asymptomatic cases was in agreement with the finding of Jordan Jr,[6] and Mody et al.[4]

The diagnosis of varicocele was made by its peculiar feel like 'bag of worms', impulse on coughing or valsalva's manoeuvre and emptying on bowing. The diagnosis was based on clinical examination only and no ancillary tests were carried out. Of the 12 patients, 7 were not married and 4 had fathered children already. One patient of bilateral varicocele was under investigation for infertility.

Macksood et al of also pointed out that there was no diagnostic difficulty. In the present series all underwent testicular vein ligation in the inguinal canal or just above the canal, and all of them had good clinical response to treatment.

Pyocele: Only 2 cases of pyocele were presented in this study (2%). One patient was 29 years old and developed infection following an attempt of tapping of pre-existing small sized right hydrocele, by a local unqualified practitioner. Subramanyam et al (1981) in a review of 58 cases of pyocele presenting between the ages 25-60 years, found filariasis in 32 cases and infected hydrocele in 12 cases.[7] The same authors in a review of large series of 881 cases of hydrocele found the incidence of pyocele to be 0.25%.

Torsion of the testis: In the present study the incidence of torsion of testis was 1% of all swellings. Macksood et al found the incidence to be 9.35%. The low incidence rate in this series might be attributable to the lack of awareness and illiteracy among the population, leading to failure to seek prompt medical attention, besides many people resort to alternative medicine in our country

The patient in the present study was 18 years old. Macksood et al found maximum incidence between 11-20 years. Patient presented after 48 hours and an emergency exploration was done. However, the testis could not be saved. Exploration found only a gangrenous testis. Prophylactic orchidopexy was also done over the contra lateral side.

In a recent review, 2 cases of false negative reports by colour Doppler ultrasonography had been brought to the attention by Steinhardt et al (1993). He had recommended that only the clinical examination should be used while deciding to explore and negative test should not overrule a strong clinical suspicion. In a developing country like ours, where sophisticated imaging modalities are scarcely available, more reliance should be placed on clinical acumen.

Epididymo-orchitis

In this study 6% of patients had epididymo-orchitis, and the total number of inflammatory conditions were 16%.

Macksood et al,[2] found the incidence of inflammatory masses to be 47.8%. Again the gross difference could be attributed to the increased prevalence of non-inflammatory scrotal mass like hydrocele in our country

In present study, 5 out of 6 patients were in 11-30 years range Macksood er al found 50% of inflammatory masses in this age group.2 Epididymitis is rare in infancy, however, its occurrence in infants suggest the presence of urinary infection, and the likelihood of an associated structural genitourinary abnormality, requiring complete urological investigation.[8]

In this study right side were affected more i.e. 4 and 2 cases respectively. However, only 3 patients had positive urine culture and E. coli being the commonest organism.

There were two cases of chronic epididymmorchitis in the present study. Mittemeyer found tuberculosis to be the cause, only in 0.8% cases.[9]

Clinically 7 patients were initially thought to have acute epididymoorchitis of which one case turned out to be torsion of testis Ultrasonography was used in all the patients. It showed the enlarged epididymis in all the cases, of course including one false positive case. FNAC was used in 2 patients and it showed non-specific inflammatory change in one and tuberculosis in other.

All the patients were managed with bed rest, scrotal support, antibiotics and attendance to general nutrition. Average hospital stay was 14 days (range 10-21 days). One patient of chronic epididymo-orchitis was managed by ATT & other by orchidectomy.

In this series, there were no cases of postoperative epididymitis following herniorrhaphy, hydrocelectomy, prostatectomy, high ligation of spermatic vein, or urethroplasty, which otherwise could lead to epididymitis as observed by Mittemeyer.

Fournier's gangrene

There were 5 patients in this study, constituting 5% of all cases. Fournier's gangrene is a rare condition. Since the time Fournier described it in 1884, 300 cases were reported in literature till 1938, and only 37 cases were reported between 1938 and 1975.[10]

The patients in the present study were ranges between 45 to 71 years old. They developed acute onset scrotal edema, pain and foul smelling discharge over a period of few days. There was no history of any local trauma, except that one had a long bus journey preceding the onset of illness. He had fever up to 100°F, but was not toxic. Two patients were having associated DM-type 2.

Diagnosis was made on clinical examination only. All were taken up for emergency wide excision of scrotum and shameful exposure of testes. One patient undergone diversion colostomy, in which perineum was also involved.

Urethral catheterization, broad spectrum antibiotics were also used. All made a slow but good recovery and the wound healed with epithelialisation in average 40 days but two patients were required SSG cover.

Testicular tumors / Paratesticular Tumors

In the present study there were 8 patients with testicular tumors constituting 8% off all scrotal swellings. Five patients were between 21-40 years; one patient aged 6 and two patients above 51 years. Only patient of paratesticular mesothelioma was 17 years old. A comparative analysis of maximum age incidence of testicular tumors in different studies. The findings in the present study are comparable with the observations of Collins and Pugh. The incidence of testicular tumor in the present study was higher (8%) compared with that of Macksood et al (2.16%). This could be attributable to the malignant diseases treatment center functioning within this hospital as the referral center for all personnel with malignancies.

There were four cases of seminoma, two with teratoma and one with embryonal carcinoma. One case of paratesticular malignant mesothelioma was also present. Other mixed varieties and nongerminal tumors were not seen in this study.

The incidence of various histological types was comparable with that of Ahuja and Rao,[10] Collins and pugh,[3] Kalra et al.[5]

The age distribution of patients with testicular tumor, histological type wise in different series was also found similar.

Ahuja and Rao also observed that malignant neoplasms of the testis were predominantly a disease of youth.[10] Some variation seen in the present study could be because only those testicular malignancies that presented as scrotal swellings were taken into consideration. Undescended testis with malignant change was not included in the study.

Both sided were affected equally. Most of other authors have observed a slight right-sided predominance All the patients presented with painless testicular swelling, 2 patients gave history of minor trauma. There were no systemic symptoms in any of cases. 1 patient with hematocele was also clinically suspected to have testicular tumor.

Ahuja and Rao found 26% of patients giving history of trauma, and in a series of 45 patients 9% were misdiagnosed as hematocele, and another 9% as hydrocele, 11% as epididymo-orchitis.[10]

In the present study whenever testicular tumor was suspected, patients were subjected to scrotal ultasonography. The ultrasonography could tell if the lesion was intra or extra-testicular, as well as cystic or solid. The one patient with hematocele was also diagnosed by USG as testicular tumor.

Only recently testicular ultrasonography has become a routine investigation worldwide. Hence combination of USG or FNAC should improve the diagnostic accuracy. The earlier studies did not have the facility of USG or FNAC and hence the incidence of orchidectomy was also high.

All the patients were treated by high inguinal orchidectomy and histopathological analysis. This was followed by appropriate adjuvant therapy in the form of radiotheraphy to retroperitoneum or chemotherapy (cisplatin, etoposide and bleomycin -4 courses over 12 weeks).

Only case of paratesticular malignant mesothelioma was treated as any high-grade sarcoma. Post orchidectomy MAID {Mesna, Adriamicin, Ifosfamide and Dacarbazine) chemotherapy was given, which was followed by hemiscrotectomy of right side and implantation of left testis in thigh (reverse orchidopexy). This was followed by local radiotherapy. Post radiotherapy the testis was implanted back to opposite hemiscrotum. That's how testicular function of opposite side was preserved. All 4 seminoma were of classical variety and in stage la, so they were treated with postop radiotherapy.

Testis was available for palpation and examination, the error in diagnosis of a scrotal mass was 25%, that would prove to be tumor later.[11] In the present study, all the cases were suspected clinically, and 1 case of hematocele (suspected to be a tumor) was also

subjected to orchidectomy. However, the solace was that the testis was found to be atrophic on histopathology.

CONCLUSION

Clinical diagnosis was found correct in 96% of the cases. The use of ultrasonography greatly helped in confirming the clinical diagnosis. This should be considered an extension of clinical methods. FNAC, histo-pathological examination and hydrocele fluid analysis helped in diagnosis as well as to find out etiology of the disease.

In future, more experience with ultrasonography, FNAC and other modern imaging modalities like colour Doppler ultrasonography and testicular scan, which are all user-dependent, is likely to augment the practicing surgeon's armamentarium and improve his preoperative diagnostic accuracy of patients presenting with scrotal swellings.

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