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Research Article

CLINICOPATHOLOGICAL STUDY OF TUMOUR LIKE LESIONS OF TESTIS

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ABSTRACT

Tumor-like lesions are rare in the testis. Clinically as well as sonographically , these lesions may be mistaken for testicular cancers. Histopathological examination is the mainstay in the diagnosis of these conditions. The aim of the study is to find out the frequency of various tumour like lesions in the testis in correlation with clinical features. Testicular biopsies, lumpectomy and orchidectomy specimens over a period of five years were retrospectively retrieved . The clinical data was collected from the histopathology requisition form & medical case records in the hospital. We have omitted the cases related to paratesticular tissue . In five years,34 cases of tumour like lesions of testis were reported, accounting o.1% of all surgical specimens and 36.5% of all testicular lesions. 16 of them were non specific orchitis (47.1%),13 tuberculous Orchitis (38.2%), 2 granulomatous orchitis (5.9%) and 3 cases of sperm granuloma(8.8%) The age range varied from 2 year to75 years. Rare case was that of filarial orchitis . It is important, to recognize these benign conditions as they simulate testicular cancers and because of the topography, they may be relevant as differential diagnoses.

Key words: tumour like, testis, orchidectomy benign

INTRODUCTON

Tumours and tumour like lesions of testis have fascinated the pathologists and clinicians alike since initial description over a century ago. Although the etiology of inflammation and infection of the organ is known and the lesion may be curable, could be mistaken for malignancy Clinically it is extremely difficult to draw a rigid line between tumours and tumour like lesions which are benign in nature. As most of them simulate testicular tumour, orchidectomy become a surgery of choice.

Utrasonographically also it is difficult to differentiate between tumours and tumour like lesions of testis, so histopathology remains a gold standard for their diagnosis. These lesions are often more ill defined and grossly also mimic with tumours Since tumours can manifest with pain. one needs to be cautious .A mass may come to a patients attention only after an episode of trauma.. This is possibly due to occurance of these entities belonging to same groups and often have more or less an identical symptomatology orchiectomy was performed.

Most common tumours like lesions of testis include non specific orchitis, non specific granulomatus orchitis, specific orchitis, malakoplakia, sperm granuloma, epidermal (epidermoid) cyst, adrenal rests, etc [1,2,3,4]

This study is undertaken to describe the

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tumour like lesions of testis and analysed data is compared with others .It is observed that very few studies had discussed tumour like lesions of testis .

MATERIAL AND METHODS:

This is a retrospective study, carried out in the Department of Pathology at Wanless Hospital Miraj over a period of five years. During this period total 34 cases of testicular tumour like lesions were diagnosed. The clinical data and surgical pathology reports with hematoxin and eosin stained slides and blocks were obtained from the record. Special stain such as AFB stain was done whenever necessary . Data was analysed and results presented as descriptive statistics including frequency and percentages.

OBSERVATIONS :

Out of 93 cases of testicular lesions received in all surgical specimens studied over a period of five year,34 (36.5%)cases were of tumour like lesions and 59 (63.5%) were that of testicular tumour indicating tumour like lesions were uncommon compared to tumour. Testicular tumour like lesions accounted 0.1% of all surgical specimens received in the department of pathology.

Among the 34 tumour like lesions, 19 were orchidectomy specimens,11 were testicular biopsies and 4 were lumpectomy specimens. Clinically all cases (100%) were presented as testicular mass (scrotal swelling). 18 (53%)cases were mistaken for testicular cancers on clinical examination .14 cases(41%) were associated with pain in scrotal region and 10 cases (29%)had history of trauma .The duration of symptoms was varied from 6 days to2 years.. Right side testis was involved in 20 cases (59%) and left side in 14 cases(41%).

Age range varied from 20year to75 years ,maximum cases were between 21to 30 years(38.2%) and 31-to40 years(29.4%) **Table1.** Twelve orchidectomy specimens were grossly resembled with testicular tumours while on macroscopic examination we could make out inflammatory lesions in 6 orchidectomy cases . Out of 34 tumour like lesions of testis, nonspecific orchitis was commonest (47.1%) and granulomatous orchitis was least common (5.9%)as shown in **Table 2.** Epididymitis was associated with 2 cases of nonspecific orchitis and 7 cases of tuberculous orchitis . Two cases of orchitis and one case of tuberculous orchitis with funniculitis, 2 cases orchitis with paratesticular abscess, and 2 cases with hydrocele and abscess were found.

Table1: Age distribution of Tumour like lesions of testis :

age range in years	No, of cases	percentage
0-10	-	-
11-20	1	2.9
21-30	13	38.2
31-40	10	29.4
41-50	5	14.8
51-60	2	5.9
61-70	-	-
>70	3	8.8
Total	34	100

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Table2: Frequency of various tumour like lesions of testis :

Tumour like lesion	Non specific orchitis	Tuberculous orchitis	Granulomatous orchitis	Sperm granuloma	Total
No. of cases	16	13	2	3	34
%	47.1	38.2	5.9	8.8	100

1 Non-specific orchitis:

16 cases of nonspecific orchitis including one case of filarial orchitis were present out of 34 cases of tumour like lesions of the testis (47.1%). The commonest mode of presentation was scrotal swelling with pain. History of trauma was present in seven cases and 3 cases were associated with hydrocoele, fever was the com-plaint in two cases. right testis was more commonly involved than left testis. Age range varied from 6 years to 65 years with an average age of 37.6 years . Clinically and grossly it was difficult to distinguish from the testicular tumour in six cases ,2 lumpectomy and 4 orchidectomy specimens. Grossly size varied from 5x4x3 cm to 4x8x7 cm, cut surface showed grey white areas with cystic spaces filled with yellowish purulent material or showed dark brown appearance with areas of haemorrhage. In case of filarial orchitis testis measured 8x4x2 cm cut surface of testis showed dark brown appearance with areas of haemorrhagic necrosis and foci of firm grey white areas. Microscopically the cases showed thickening of tunica, in-filtration by polymorphs, lymphocytes, plasma cells in the inter stitium as well as within semini ferous tubules(Fig1). There was either acute(2 cases) or chronic (8cases) or acute on chronic non specific orchitis(6cases). Four cases showed associated epididymitis. A case of acute on chronic orchitis showed an adult filarial parasite within testicular parenchyma. In one case there was associated atrophy and in another there was hypospermatogenesis.

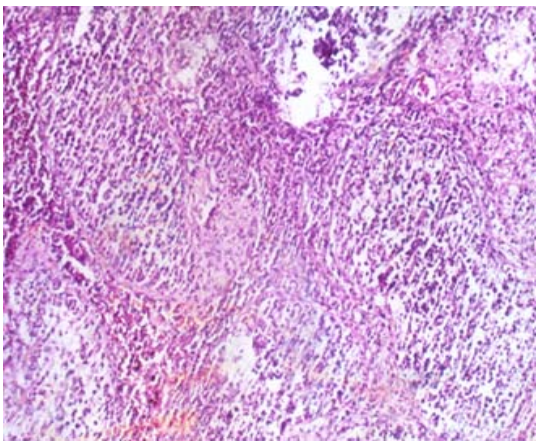

Fig1: Non specific orchitis(100x,H&E)

2.Tuberculous orchitis :

It accounts for 13 cases of tumour like lesions of the testis (38.2%).All were orchidectomy specimens The age range was varied from 21 years to 60 years with average age of 33.5 years. The patient was presented as scrotal swelling with or without pain. Associated fever was observed in one case. Hydrocoele was present in two cases,It was associated with epididymitis in seven cases. Grossly it was difficult to differentiate this lesion from testicular tumours except in three cases in which caseous necrosis was obvious. The size varied from 3x2x4 cm to 10x6x4cm, cut surface was grey white with areas of necrosis. Microscopically the lesion showed typical granulomas of tuberculosis composed of epitheliod cells, Langerhans' giant cells and lymphocytes with or without central areas of casesous necrosis(Fig2). In seven cases tuberculous epididymitis was also noted. One case was associated with tuberculous funiculitis . AFB stain was negative in all ases.

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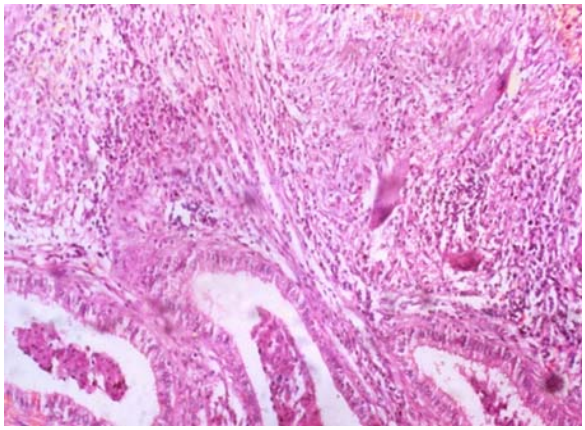

Fig2: Tuberculous Epididymo-orchitis showing
epitheliod granuloma(100x, H&E)

3.Granulomatous orchitis :

It was seen in two cases out of 34 tumour like lesion of the testis. The age was 35 year and 50 years. Both the cases presented with scrotal swelling . Grossly the testis measured 5x5x3 cm, cut surface showed grey-white appearance. There was no history of trauma to the testis.

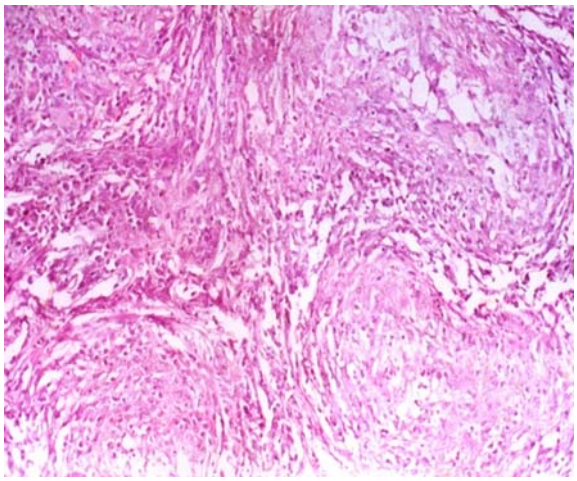

Fig3: Granulomatous orchitis.epitheliod granuloma
involving semineferous tubules(100x, H&E)

Microscopically testis showed granulomatous reaction of epithelioid cells, foreign body giant cells & lymphocytes in one case. The other case showed diffuse mononuclear cell infiltration of interstitium & few granulomas composed of histiocytes, lymphocytes & epitheliod cells within the seminiferous tubules and interstitium.(Fig3) There was no evidence of caseous necrosis in either case.

4)Sperm granuloma :

Sperm granuloma was seen in three cases out of 34 tumour like lesions of the testis. The age range varied from 30 years to 75 years with average age of 49.3 years. The scrotal swelling with or without pain was the initial symptom there was history of trauma in all three cases. Grossly testis measured 5x5x2:.5 cm to 5.5x7f..5x7; cm cut surface showed dark brown appearance. Microscopically the testis showed granulomatous reaction composed of histiocytes, few multinucIeated giants cells and scattered sperm heads & lymphocytes around a central necrotic area.

DISCUSSION:

Tumor-like lesions are rare in the testis as compared to testicular tumours,most of which are malignant in nature.[1,2,3,4] These lesions are often more ill defined than tumors, but there is considerable overlap in their clinical and ultrasonological appearances. The tumours like lesions of testis include non specific orchitis,non specific granulomatus orchitis, specific orchitis malakoplakia,sperm granuloma, epidermal (epidermoid) cyst , adrenal rests testicular torsion , testicular infarction , testicular vasculitis, splenogonadal fusion, and sarcoidosis [1,2,3,4] The commonest mode of presentation is scrotal mass with or without pain .The testicular tumour like lesions occur between adolescents and middle-aged persons The same period in which testicular cancers are commonly seen . Most of the time these lesions simulate testicular tumours clinically as well as sonologically and mistaken for cancers.

Fine needle aspiration and testicular biopsy may help to diagnose these conditions but these procedures are contraindicated in case of clinically suspicious of malignancies in fear of dissemination of malignancy. so

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histopathology remains a gold standard for their diagnosis .These have more or less an identical symptomatology and many a times an orchiectomy was performed. Fine needle aspiration and testicular biopsy may help to diagnose these conditions but these procedures are contraindicated if clinically suspicious of malignancies.

The clinical presentation is key, because the preceding conditions are more likely to manifest with an acute scrotum. One needs to be cautious, however, since tumors can manifest with pain, albeit usually a dull ache. A mass may come to a patient's attention

only after an episode of trauma .Though there is lot of literature on testicular tumours very few reports include tumour like lesions of testis .Even on extensive pub search (keywords: orchitis, tumour like lesions ,sperm granuloma etc) isolated case studies about these lesions are seen reported in the literature..

Exact incidence and prevalence of tumour like lesions of testis is not known as more studies are focused on testicular cancers which are more common.. Collins D.H.& Pugh R.C.B· [5] and Gupta S.C. et al [6]had studied testicular tumour like lesions along with testicular tumours with more emphasize on tumours. The incidence of tumour like lesion in the present series is (36.5%),. Collins D.H.& Pugh R.C.B[5](2.4%) & in Gupta S.C.et al series [6] (8.6%)among the all testicular lesions. The comparision of frequency of varioustumour like lesions of testis with other studies is shown in Table3.

McClure J [7] had studied 74 cases of inflammatory lesions of testis and epididymis over a period of 43 years in which 52 cases showed testicular involvement either isolated or in association with epididymitis. The frequency of non specific orchitis is Collin D.H. & Pugh R.C.B[5] 32%) & Gupta S.c.et al[6] (50%) ,McClure J[7] (75%) and present study (47.1%) respectively..The of granulamatous orchitis in the Collin & Pugh series[5] is 64%. While in

Table3: Comparision of frequency of testicular tumour like lesions with other workers

Tumour like lesions	Collins D.H.& Pugh R.C.B[5]		Gupta S.C.et al [6]		McClure J[7]		Present study	
	No of cases	%	No of cases	%	No of cases	%	No of cases	%
Non specific orchitis	8	32	4	50	39	75	16	47.1
Tuberculous orchitis	1	4	4	50	-	-	13	38.2
Granulomatous orchitis	15	60	-	-	10	13.5	2	5.9
Sperm granuloma	-	-	-	-	-	-	3	8.8
Malakoplakia	1	4	-	-	3	-	-	-
Total	25	100	8	100	52	5.7	34	100

our series it is 5.9%. Tuberculous orchitis presented as a single case i.e.4% in Collin D.H & Pugh R.C.Bseries[5] , 4 cases (50%) in Gupta S.Cet al[6] study & 13 cases comprising 38.2% in our study. Clinical presentation influences the percentage of tumour like lesions hence variable results are obtained by various workers.

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Tumour like enlargement of the testis may result from acute or chronic nonspecific orchitis or due to specific orchitis. Acute non specific orchitis may develop as in ascending infection via the vas deferances and epididymis or as a combination epididymoorchitis, or a metastatic lymphogenous or haematogenous infection. [1,2,3,4] In children viral orchitis due to paroitis is commonly seen.In sexually active men younger than age 35 years, the sexually transmitted pathogens C. trachomatis and Neisseria gonorrhoeae are the most frequent culprits. In men older than age 35 the common urinary tract pathogens, such as E. coli and Pseudomonas, are responsible for most infections.(3, 8) Acute inflammation of the testicle may completely resolve, or the inflammatary process may continue in a chronic form . Specific orchitis may be caused by leprosy,syphilis ,fungal, filarial or mumps ,HIV or infections [1,2,3,4] We found 16 cases (47.1%) of nonspecific orchitis out of which 4 cases showed epididimytis . Microscopically there was either acute(2 cases) or chronic (8cases) or acute on chronic non specific orchitis(6cases). Gupta S.C. et al(6) found 4 cases of chronic nonspecific orchitis. Collin D.H and Pugh R.C.B) [5]. found 8 cases of nonspecific orchitis .We also
found a case of filarial orchitis in which adult filarial parasite was seen within testicular parenchyma. McClure J [7]had studied 74 cases of inflammatory lesions of testis and epididymis over a period of 43 years. He observed total 39 cases of (75%) of orchitis epididymitis ,out of which 28 cases were associated with epididymitis (28cases). In his series ,microscopically 8 cases showed features of acute orchitis, 15 cases with acute on chronic and 16 cases with chronic orchitis .

Tuberculous epididymo-orchitis is an important manifestation of genitourinary tuberculosis (GUTB). Many cases coexist with pulmonary tuberculosis or tuberculosis(TB) of other parts of lower genitourinary system including bladder, ureter and prostate . Isolated instances of tuberculous epididymitis or epididymo-orchitis is rare but when it occurs, a comprehensive assessment of the patient is mandatory Recent surge in the prevalence of TB worldwide linked to human immunodeficiency virus (HIV) pandemic has resulted in a concomitant increase in extrapulmonary tuberculosis of which GUTB accounts for up to 20% in endemic areas.[9]

The "Granulomatous orchitis" is a chronic inflammatory lesion of unknown etiology that results in enlargement and hardness of the testis which may clinically or pathologically simulate a neoplasm [2,11]. It is a disease of obscure etiology and pathogenesis.usally occurs between 40 to 70 years ,cases as young as25 years have been reported. Granulomatous orchitis was seen in 2 cases.(5.9 %).out of 34 tumour like lesions. Collins D.H. & Pugh R.C.B[5] found 15 cases (60%)of granulomatous orchitis in their panel study. McClure J[7] found only 10 cases(13.5%) of it over a period of 43 years .G.C,Raju and V,Naraynsingh [12] in their analysis of testicular masses over a period of 14 years found only one case of it. In a 38 years review of Kahn and McAninch 17 cases were described. Of 2000 testes submitted to testicular tumour research panel of United Kingdom ,only 32(1.6%) cases were classified as granulomatous orchitis[12]

Sperm granuloma is a chronic inflammatory lesion due to extravasation of spermatozoa giving rise to a hard nodule simulating malignancy[2,4]. In our study 3 cases of sperm granuloma are found within the testis. Collins D.H. & Pugh R.C.B[5] in their panel study found 4 cases of sperm granuloma in epididymis. We did not come across the case of malakoplakia of the testis

, epidermoid cysts which are very rare lesions. Collins D.H. & Pugh R.C.B [5] found one case of malakoplakia of the testis in their panel study of testicular tumours. McClure [7] J only found 3 cases(4.3%) of malakoplakia over a period of 43 year .indicating its rare occurance in the testis .

CONCLUSIONS: Tumor-like lesions are rare in the testis. Clinically, these lesions (cysts, ectopic tissues, and vascular, inflammatory, or hyperplastic lesions) are of great interest as they mimic with testicular tumours and, because of the topography, they may be relevant as differential diagnoses. Definitive diagnosis, however, in many lesions is still possible only on histopathology. The purpose of this article is to raise awareness of, and formulate a minimally invasive diagnostic approach to,this unusual but important entities.

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