

## FINE NEEDLE ASPIRATION CYTOLOGY OF EPIDIDYMAL SWELLINGS IN RIMS HOSPITAL, IMPHAL: A FIVE-YEAR STUDY

Rajesh Singh Laishram<sup>1</sup>, Tlangte Zothanmawii<sup>2</sup>, Padi Yasung<sup>3</sup>, Ruokuovinu Rachel<sup>4</sup>, Gubbala Durga Devi<sup>5</sup>, Debanjan Ghosh<sup>6</sup>

<sup>1</sup>Assistant Professor, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

<sup>2</sup>PG Student, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

<sup>3</sup>PG Student, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

<sup>4</sup>PG Student, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

<sup>5</sup>PG Student, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

<sup>6</sup>PG Student, Department of Pathology, Regional Institute of Medical Sciences, Imphal, Manipur.

### ABSTRACT

#### BACKGROUND

Epididymal nodules are frequently encountered in surgical practice. They are easily accessible to fine needle aspiration cytology (FNAC). Clinically, these nodules present as worrisome nodules to the patients as well to the patients. This study was conducted to study the clinico-pathological profile of patients presenting with epididymal nodule using fine needle aspiration cytology (FNAC).

#### METHODS

A retrospective study was done by critically analysing the FNAC reports of palpable epididymal swellings in last five years (January 2010 to December 2015) at the Department of Pathology, Regional Institute of Medical Sciences (RIMS) Hospital, Imphal, Manipur. Review of all the reports were done and diagnosis was made according to standard guidelines and correlated with patient's age, sex, and side of involvement to explore the disease pattern.

#### RESULTS

A total of 71 cases were retrieved and divided as follows: Tuberculous epididymitis 20(28.17%), spermatocoele 11(15.49%), non-specific chronic epididymitis 10(14.08%), spermatic granulomas 6(8.45%), acute epididymitis 6(8.45%), hydrocoele 5 (7.04%), adenomatoid tumour 4(6.63%) and microfilaria 1(1.41%). FNAC material was inadequate for opinion in 8 cases (11.28%) cases.

#### CONCLUSION

FNAC has a definite important role in the differential diagnosis of epididymal nodules as it can identify neoplastic and non-neoplastic conditions. FNAC can thus be used to segregate the group of patients requiring a surgical intervention and a biopsy.

#### KEYWORDS

FNAC, Epididymitis, Spermatocoele, Adenomatoid Nodule, Spermatic Granulomas.

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**INTRODUCTION:** Epididymis is a tubular continuation of ductuli efferentes, which acts as temporary storage site of sperm.<sup>1</sup> Both non-neoplastic and neoplastic diseases are known to occur at this site. Moreover, epididymis acts as a seat for various infections like Chlamydia trachomatis, Neisseria gonorrhoea, E. coli, Tuberculosis and other organisms including fungal infections. This may lead to spread of infection to adjacent structures and testicular necrosis secondary to hypoperfusion caused by ischaemia.<sup>2</sup> Early diagnosis of such lesion is crucial to provide appropriate treatment and avoid untoward complications.

Fine needle aspiration cytology (FNAC) is a simple, easy and rapid diagnostic test used in the evaluation of epididymal swellings.<sup>3,4,5</sup> Studies documenting the disease pattern in epididymal swelling are rare. This urged us to explore the clinico-pathological profile of patients presenting with epididymal nodule in our tertiary care center using fine needle aspiration cytology.

**AIMS AND OBJECTIVES:** To study the clinicopathological profile of patients presenting with epididymal nodule using fine needle aspiration cytology.

**MATERIALS & METHODS:** This is a retrospective study done in Department of Pathology, Regional Institute of Medical Sciences, Imphal, starting from January 2010 to December 2015. Clinical data, FNAC reports and smears of epididymal swellings were retrieved from the cytology section. FNAC was performed using 23 gauge needle with 20 mL syringe and Cameco syringe holder in all cases.

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*Corresponding Author:*

*Dr. Rajesh Singh Laishram,*

*Assistant Professor, Department of Pathology,  
Regional Institute of Medical Sciences, Lamphelpat,  
Imphal-795004, Manipur.*

*E-mail: rajeshlaishr@gmail.com*

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Smears were routinely stained with Giemsa and special stains employed wherever needed. Standard guidelines for cytological diagnosis were followed.<sup>6</sup> Patient's presenting symptoms and signs, size of nodule (In largest dimension), and cytodiagnosis were thoroughly analysed. Cases were categorised into following entities: Acute epididymitis, Non-specific chronic epididymitis, tuberculous epididymitis, microfilaria, hydrocoele, spermatocele, spermatic granuloma and adenomatoid tumour. Their average size of presentation, number of aspirations required for diagnosis, distribution pattern according to different age groups and side of involvement were studied.

**Inclusion Criteria:** All those adult patients who came with epididymal nodules during the study period were included in the study.

**Exclusion Criteria:** Patients who refuse to undergo FNAC or who was earlier diagnosed as malignancy were excluded.

**RESULTS:** A total of 71 cases were retrieved and FNAC material was inadequate for opinion in 8 cases (11.28%) cases. Thus a total of 63 cases where the diagnosis was possible, were studied during the study period. Patients were seen from 17 years to 79 years with mean age of presentation being 39.7 years (SD=15.4 years). Majority of cases were observed in third decade of life. There were 33 cases (33/63; 52.2%) on right side, 27 cases (27/63; 42.8%) on left side and 3 cases (3/63; 5%) were bilateral.

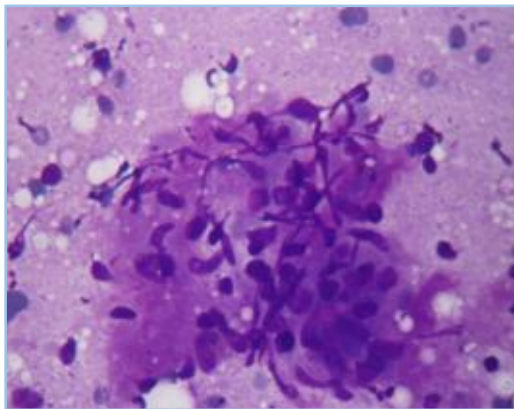
Right-sided involvement of tuberculosis was observed in 10 cases (10/20; 50%), left side involvement in 9 cases (9/20; 45%) and bilateral involvement in 1 case (1/20; 5%).

Adenomatoid tumour was frequent on right side (3/4; 75%). The smallest nodule observed in our study was 0.5 cm in greatest dimension and largest was 10 cm. Tuberculous epididymitis ranged from 0.5 cm to 6 cm (mean=2.4 cm) while spermatocele ranged from 1 cm to 8 cm (mean=4 cm). Adenomatoid tumour was seen from 1 cm to 4.5 cm (mean=2.3 cm). In most of the cases cytodiagnosis was possible with the initial aspirate while a repeat aspiration was needed in 5 cases (7.9%). Out of 63 cases, 59 were non-neoplastic and 4 were neoplastic. A wide range of non-neoplastic diseases were encountered in our study which includes: Acute epididymitis (6/63; 9.50%), non-specific chronic epididymitis (10/63; 15.87%), tuberculous epididymitis (20/63; 31.75%) [Fig-1], spermatic granuloma (6/63; 9.50%), hydrocoele (5/63; 7.94%) spermatocele (11/63; 17.46%), and microfilaria (1/63; 1.59%).

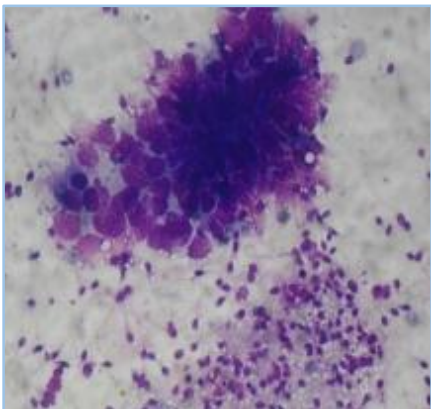
Neoplastic disease was infrequently seen with 4 cases of adenomatoid tumour (4/63; 6.35%). Disease pattern in relation to different age groups are shown in table-1 and their images in Figure 3-7: Among the non-neoplastic diseases, tuberculosis (31.75%) was the most common lesion, followed by spermatocele (17.46%). Patients with tuberculous epididymitis presented with ill defined, painful swelling lasting for 1 week to 6 months. Discharging sinus was seen in 3 cases (3/20; 15%) while a previous history of tuberculosis was present in 1 case (1/20; 5%). Spermatocele presented with well-defined, painless cystic swelling lasting for 1 month to 2 years. In all cases of spermatocele, the aspirate was whitish (rice water like) and swelling markedly decreased in size after aspiration.

AGE (In years) =>	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
Acute Epididymitis	-	1	3	-	2	-	-	-	6
Non-specific Chronic Epididymitis	-	-	2	1	2	2	1	2	10
Tuberculous Epididymitis	-	3	1	7	3	3	2	1	20
Microfilaria	-	-	1	-	-	-	-	-	1
Hydrocoele	-	-	1	2	2	-	-	-	5
Spermatocele	-	-	4	2	2	2	1	-	11
Spermatic granuloma	-	1	3	-	1	1	-	-	6
Adenomatoid tumour	-	-	1	2	-	1	-	-	4

**Table 1: Disease Pattern in Relation to Different Age Group**



**Fig. 1: Microphotograph Showing Granuloma in a Case of Tuberculous Epididymitis. (MGG Stain, 40X)**



**Fig. 2: Microphotograph Showing Spermatic Granuloma. (MGG Stain, 40X)**



**Fig. 3: Microphotograph Showing Microfilaria. (MGG Stain, 40X)**

**DISCUSSION:** In routine practice, FNAC of epididymal swelling is a technically challenging procedure because of its small size and overlying abundant scrotal tissue which makes palpation difficult. Recent studies have shown high sensitivity and specificity (90% Each Respectively) of FNAC in diagnosing epididymal swellings.<sup>7</sup> In our study, majority of patients had tuberculous epididymitis (31.75%) which is comparable to other studies done in India.<sup>3,5</sup> It was seen from 17 years to 79 years of age with mean age of presentation being 42.5 years (S.D=16.5 years). A previous history of tuberculosis was observed only in 5% (1/20) of patients. The presence of longstanding ill-defined swelling particularly those with discharging sinus and caseous material during aspiration should raise the possibility of tuberculosis. Under such circumstances, a search for caseating granuloma & AFB should be made in smears.

Tuberculosis of epididymis can occur by haematogenous route or by direct spread from urinary tract. Earlier is common in children while later is common in adults.<sup>8</sup> Diagnosis of tuberculous epididymitis is of prime importance because most of the patients harbour asymptomatic focus of infection in kidney or prostate. However, it can be the sole manifestation of genitourinary tuberculosis which is known as 'isolated tuberculous epididymitis'.<sup>9</sup>

Cystic lesions were 16 in number including 11 cases of spermatocele and 5 cases of hydrocoele. Spermatocele was the second most common lesion (17.46%) observed in our study showing many spermatozoa in the background of occasional macrophages. There were 6 cases of spermatoc granuloma (9.5%) in which one was bilateral. Spermatoc granuloma may clinically mimic tumour due to its well-defined nature and firm consistency.<sup>10</sup> The typical cytologic findings of non-caseating granuloma, along with intra-histiocytic and extracellular spermatozooids in the background of mixed inflammatory cells makes the diagnosis of spermatoc granuloma straightforward. There was one case of filarial infection which showed sheathed microfilaria with many eosinophils and few lymphocytes in background. Lymphatic vessels of spermatic cord appear to be the principal residing site of adult worm (*Wuchereria bancrofti*).<sup>11</sup>

Even granuloma formation surrounding dead filarial worm has been reported by some workers.<sup>12</sup> Among neoplastic lesions, there were 4 cases of adenomatoid tumour (6.35%). No malignant tumours were observed in our study because of their rarity. All 4 cases of adenomatoid tumour had clusters of oval to polygonal cells with abundant vacuolated cytoplasm, eccentric nucleus and finely distributed chromatin as described by other workers.<sup>13,14,15</sup> In our study, average size of adenomatoid tumour was 2.3 cm.

**CONCLUSION:** Non-neoplastic diseases are more common in epididymis, with tuberculosis being the most common lesion. FNAC is an easy and rapid test useful for initial workup of cases with epididymal swelling.

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