



## STUDY OF FINE NEEDLE ASPIRATION CYTOLOGY OF NODULAR LESIONS OF SCALP

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**ABSTRACT** Fine Needle Aspiration Cytology (FNAC) is a safe method in the diagnosis of Scalp lesions. It has limitations in typing of skin adnexal tumours so histopathological correlation is necessary for the diagnosis. In the present study, 40 cases of clinically diagnosed nodular lesions were evaluated by FNAC and correlated with histopathology. There was 100% correlation in cases of epidermal inclusion cyst, lipoma, acute and chronic inflammatory lesions and 65% accuracy was seen in adnexal tumours. FNAC is a rapid, cost effective, minimally invasive procedure with high rates of sensitivity and specificity in diagnosing nodular lesions of scalp.

**KEYWORDS :** Scalp, Nodular lesions, Histopathological correlation, Adenexal tumors

### INTRODUCTION

Nodular lesions of scalp occur due to various neoplastic and non-neoplastic conditions. Although biopsy is the commonest method for diagnosing these lesions, however cytological assessment of scalp lesions is a rapid and easy technique for providing valuable information in certain conditions. To avoid scarring FNAC is preferable to biopsy for lesions close to facial area. It is also useful in differentiating benign from malignant tumour. Some of the lesions that can be diagnosed on FNAC include epidermal inclusion cyst, Lipoma, Acute and chronic inflammatory conditions and Skin adenexal tumors.

### MATERIALS AND METHODS

Forty cases of clinically diagnosed nodular lesions, who attended the Departments of surgery and dermatology in Jawahar Lal Nehru Medical College hospital Bhagalpur for a period of three months from June 19 to August 19 were studied. A brief history was taken from all patients and procedure of Fine Needle Aspiration was explained. After examining the lesions, FNAC was done under aseptic precautions in department of pathology (cytology section) JLNMC bhagalpur. Smears were stained with routine stains like May Grunwald Geimsa (MGG), Haematoxylin and Eosin (H&E) and Papanicolaou (PAP). Special stains like Ziehl-Neelsen was done wherever necessary. Routine investigations like haemoglobin percentage, total count, differential count, erythrocyte sedimentation rate, peripheral blood smear, chest X-ray and ultrasound abdomen were advised whenever necessary. Biopsy was done under local anaesthesia and the sample was placed in saline solution and fixed in 10% formalin. After routine processing and paraffin embedding sections were stained with H&E stain and studied in brief.

### RESULTS

In the present study cytology and histopathology of all 40 nodular scalp lesions studied ranged from inflammatory to neoplastic (Table-01). It was observed that inflammatory lesions and epidermal inclusion cysts occur in all age groups and more number of male patients presented with nodular lesions of scalp. The commonest lesions were epidermal inclusion cysts (22 cases), followed by inflammatory lesions (09 cases), lipoma (05) and benign skin adenexal tumours (03 cases) and malignant skin adenexal tumour (01 case). No skull involvement was detected in any lesions. Cytological findings of all lesions were correlated with histopathological findings and found 100% accuracy in cases of epidermal inclusion cysts, inflammatory lesions and benign adenexal tumours. Also sensitivity for epidermal inclusion cyst and inflammatory lesions was 100%.

**(Table-01) Nodular lesion of scalp**

	Frequency	Percentage(%)
Epidermal inclusion Cyst	22	55%
Acute inflammatory lesion	08	20%
Chronic non-specific lesions	01	2.5%
Lipoma	05	12.5%
Benign adnexal tumour	03	7.5%
Malignant skin adenexal tumour	01	2.5%
<b>Total</b>	<b>40</b>	<b>100%</b>

**[Table -2] Age distribution of nodular lesions of scalp**

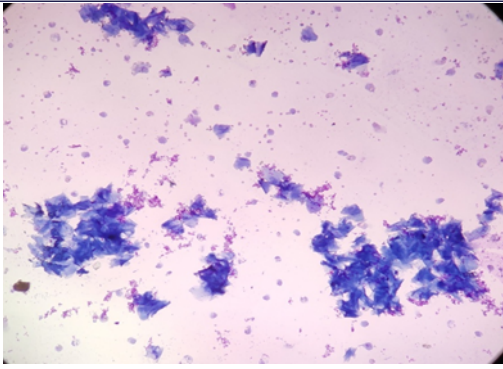
	Epidermal cyst	Inflammatory lesions	Lipoma	Benign adenexal tumour	Malignant lesions
0-10	01	00	00	00	00
11-20	01	02	00	00	00
21-30	07	03	03	01	00
31-40	03	02	01	00	00
41-50	04	01	01	02	00
51-60	03	00	00	00	00
61-70	02	00	00	00	00
71 & above	02	00	00	00	01
<b>Total</b>	<b>22</b>	<b>09</b>	<b>05</b>	<b>03</b>	<b>01</b>

### DISCUSSION

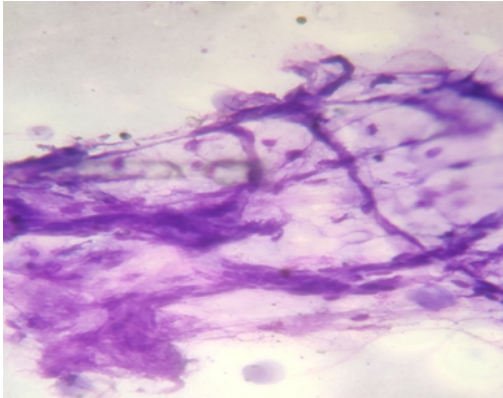
The present study was an attempt to assess the diagnostic accuracy of FNAC on nodular lesions of skin. In recent years FNAC has replaced biopsy as a diagnostic procedure and is preferred as a pre-operative non-invasive procedure. Epidermal cyst (FIG - 1) was the most common lesion we encountered. Epidermal inclusion cysts were commonly seen in scalp and pre-sacral area. All 22 cases underwent histopathological examination and all of them correlated well. The diagnostic accuracy of epidermal inclusion cyst FNA in the present study was 100%. We reported 05 cases of lipoma which on cytology showed adipose tissue which was indistinguishable from normal fibroadipose tissue. The fat cells were vacuolated with nuclei pushed to the periphery ( FIG - 2). Histopathology confirmed the cytology diagnosis in all five cases. We also reported 03 cases of benign skin adenexal tumour which showed moderately cellular smears, with cells arranged in clusters and single with individual cells had pale vesicular nuclei. One case of benign adenexal tumour was misdiagnosed as basal cell carcinoma in our study. Cytology smears showed basaloid cells and numerous acute inflammatory cell infiltrates which on histopathology diagnosed as pilomatixoma. Pilomatixoma is a nodular subepidermal benign tumour arising from the hair matrix. It characteristically present as a solitary, firm, slow growing subepidermal nodule mostly located on head and neck. The tumour affects mostly children and adolescents. Thus, aspiration cytology proved very useful in classifying the nature of scalp nodules and eliminating the need of a surgical biopsy. FNA can also play an important role in the diagnosis and therapeutic planning of nodular lesions of scalp.

### CONCLUSION

FNA can provide a rapid and accurate typing of scalp nodules, especially useful due to their extremely easy accessibility. Various studies have established the utility of this test. It will provide definite diagnosis in majority of cases especially epidermal inclusion cysts and lipoma. It is cost effective with high diagnostic accuracy. Thus, FNAC is a quick, safe and a less traumatic procedure to diagnose nodular lesions of scalp.



**FIG – 1 Aspirate smear from scalp lesion showing numerous anucleate and nucleate squames**



**FIG -2 showing vacuolated fat cells with nuclei pushed to the periphery**

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