



DIAGNOSTIC ROLE OF FINE NEEDLE ASPIRATION IN CERVICAL LYMPHADENOPATHY

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**ABSTRACT** Cervical lymphadenopathy is the commonest and frequent clinical presentation in patients of all age group, the etiology range from non specific-reactive, inflammatory, lymphoproliferative disease to metastatic deposits. FNAC is a safe, easy, quick diagnostic technique and is the first line of investigation in evaluation of lymphadenopathy. The objective of this study is to evaluate the spectrum of lesions in cervical lymphadenopathy and the diagnostic role of FNAC in cervical lymphadenopathy.

**METHODS:** The study was conducted in Department of Pathology, Government Medical college Pudukkottai, on 100 cases of cervical lymphadenopathy over period of six months from August 2018 to January 2019.

**RESULTS:** In this study most of the cases nonneoplastic (86%) and rest cases were neoplastic (14%). The commonest frequent cause for nonneoplastic was Reactive lymphadenitis, followed by Tuberculous lymphadenitis.

**CONCLUSION:** FNAC of cervical lymph node is an excellent first line diagnostic tool to determine the nature of lesion. In our study, the predominant cause of lymphadenopathy was reactive lymphadenitis, seen in more than half of total cases, followed by tuberculous lymphadenopathy and malignant neoplasms. FNAC was helpful in establishing the diagnosis and quick guide to assess the mode of treatment.

**KEYWORDS :** FNAC, Lymphadenopathy, Tuberculous lymphadenitis, Metastatic lymphadenitis.

**INTRODUCTION:**

Lymphadenopathy refers to nodes that are significant in size, consistency or number. Cervical lymph node measuring more than 1 cm is known as cervical lymphadenopathy<sup>1</sup>. Cervical lymphadenopathy is one of the most common presentations in inflammatory and neoplastic disorder. FNAC of the cervical node is relatively simpler and offers quick reliable results. This study was conducted to evaluate the cytomorphological patterns, their distribution among various age groups and gender, and to evaluate FNAC as a diagnostic tool in the patients with cervical lymphadenopathy.

**MATERIALS AND METHODS:**

This study was conducted at Government Medical College, Pudukkottai over a period of 6 months (August 2017 to January 2018). 100 patients of all age groups and both sexes who attended pathology department for FNAC of cervical lymphadenopathy were evaluated. The fine needle aspiration slides were stained with Hematoxylin and eosin (H & E) and Giemsa stain. The slides were reviewed and the results were classified as non-neoplastic and neoplastic lesion.

**RESULTS:**

Out of 100 cases with cervical lymphadenopathy, 61 (61%) were male and 39 (39%) were female. The ratio of male and female was found to be 1.5: 0.7. The age range of the patients was 1-80 years. The disease was more frequently seen in the age group of 1-10 years (Table 1). Upper cervical lymph nodes were involved in maximum cases (84 cases, 84%). FNAC of 100 cases in our study show (82%) as non-neoplastic and 18 cases (18%) as neoplastic. Reactive lymphadenitis cases was the most common in 48 cases (48%) followed by tuberculous lymphadenitis in 26 cases (26%).

**TABLE 1: Distribution of cases in various age group**

AGE (years)	NO OF MALE	NO OF FEMALE	TOTAL	%
1-10	24	7	31	31
11-20	9	6	15	15
21-30	3	9	12	12
31-40	8	2	10	10
41-50	5	6	11	11
51-60	7	7	14	14
61-70	4	1	5	5
71-80	1	1	2	2
Total	61	39	100	100

**TABLE 2: Cytological diagnosis of cervical lymphadenopathy**

S.NO	CYTOLOGICAL DIAGNOSIS	NO OF CASES	TOTAL CASES
1.	REACTIVE LYMPHADENITIS	48	48%
2.	TUBERCULOUS LYMPHADENITIS	26	26%
3.	SUPPURATIVE LYMPHADENITIS	8	8%
4.	LYMPHOPROLIFERATIVE	4	4%
5.	METASTATIC	14	14%

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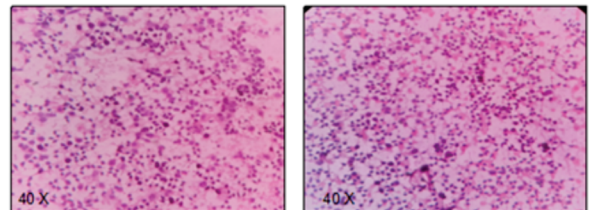


Fig.1 a,b shows features of Reactive lymphadenitis ( Hematoxylin and Eosin stain).

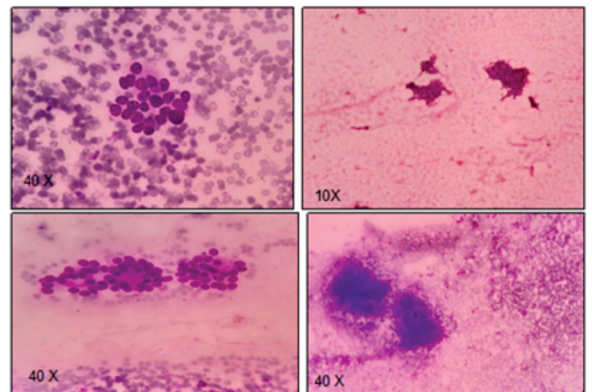


Figure 2: Smears show epithelioid cell granulomas along with caseous necrosis in background (hematoxylin and eosin stain).

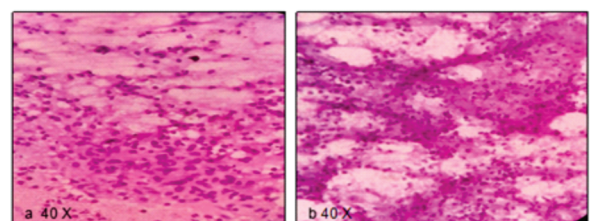


Fig.3 a,b shows features of acute suppurative lymphadenitis ( Hematoxylin and Eosin stain).

(Table 2, Fig 1a and b ). Reactive lymphadenitis was common in the age group of 1-10 years with male preponderance ,whereas tuberculous lymphadenitis was common in the age group of 21-30 years with female preponderance as shown in Fig. 2 a,b,c & d . Acute suppurative lymphadenitis 8cases(8%)as in Fig. 3 a & b .Out of 18malignant lesions metastatic carcinomas 12cases of Squamous cell carcinoma (Fig 4a & b ) was the most common morphological type observed ,followed by one case each of Poorly differentiated carcinoma and Adenocarcinomaas shown in Fig. 4 c & d,4cases of lymphoproliferativedisorder of which Non- Hodgkin's lymphoma comprising 3casesand 1Hodgkin's lymphoma of the total malignant cases as shown in Fig 5 a & b and Fig 6 a & b .

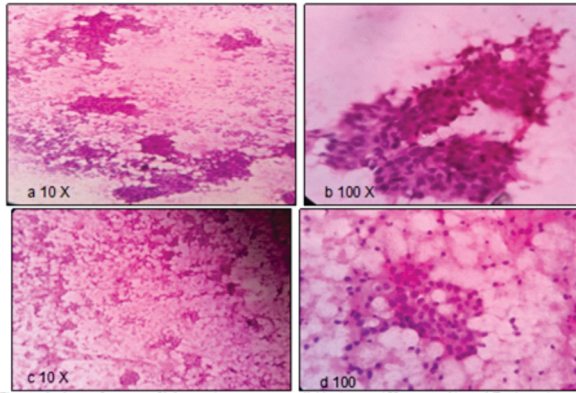


Fig 4 a,b shows features of Metastatic squamous cell carcinoma ( Hematoxylin and Eosin stain).  
Fig. 4 c,d shows features of Metastatic Adenocarcinoma ( Hematoxylin and Eosin stain).

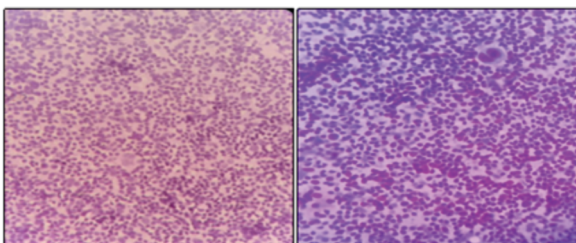


Fig 5 a shows features of Hodgkins lymphoma (Hematoxylin and Eosin stain 40 X )  
Fig 5 . b shows features of Hodgkins lymphoma(Giemsa stain 40 X)

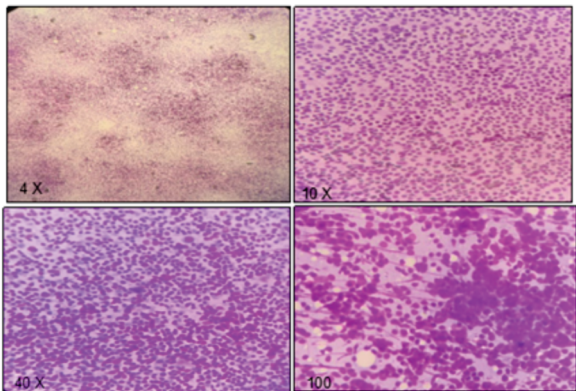
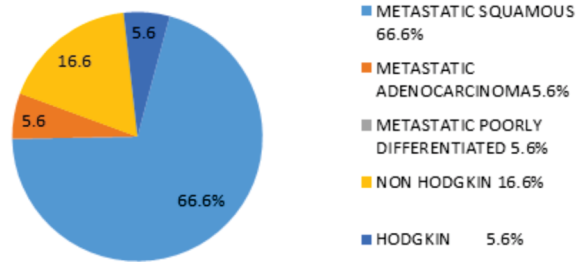


Fig 6 a,b,c shows features of Non Hodgkins lymphoma(Hematoxylin and Eosin stain )  
Fig 6 d shows features of Non Hodgkins lymphoma(Giemsa stain )

**DISCUSSION :**

FNAC is a reliable diagnostic tool to aid in the diagnosis of lymph node lesions. It is cost effective, safe and quick and reduces the need for surgical biopsy.<sup>3</sup> Aspiration of lymph nodes was first done by Griey and Gray in 1904, in a patient with sleeping sickness<sup>2</sup>. It was Dudgeon and Patrick in 1927, who first used FNAC in diagnosing tuberculous lymphadenitis.<sup>7</sup> FNAC has an important role in categorizing the lesions to reactive ,inflammatory,infectious,primary malignant condition like lymphoma or secondary metastatic deposits.In cases with metastatic lymphadenopathy of unknown primary, FNACof such enlarged lymphnodes not only confirms metastatic deposits but also may give a clue regarding primary site of malignancy and helps in further management.<sup>3</sup>In our study cervical lymphadenopathy was assessed and it was found that cervical lymph nodes were the most common group of lymph nodes involved, which is similar to that observed by

Sachin A. Badge et al<sup>7</sup>Pavithra et al,<sup>12</sup> Chandanwale et al.<sup>15</sup>, Kochhar et al<sup>9</sup>. and Mohanty et al<sup>8</sup>.



**Fig 7 Metastatic Deposits in cervical lymph nodes 18 cases**

The commonest finding was reactive lymphadenitis 48% ,followed by Tuberculous lymphadenitis 26% and metastatic deposits 14%. In our study Reactive lymphadenitis ( 48%) was common in the age group of 1-10 years with male preponderance .The result was comparable to study done by Mohanty et al<sup>8</sup>,Kochhar K et al <sup>9</sup>and Adhikari P et al <sup>10</sup> where in reactive lymphadenopathy was the most common lesion found . Age group occurrence was similar to study done by Khajuria R et al <sup>11</sup> and Gayathri MN et al <sup>16</sup> reported highest incidence during the first decade.This study showed Tuberculous lymphadenitis was the second common lesion and was reported in 26% cases and most cases were in the age group 21-30 years with predominance in females .Whereas Khajuria R et al<sup>11</sup> did the same study in 2006 and found tuberculous lymphadenitis to be the most common. This difference may be explained by better awareness among the patients and better treatment availability to patients. Khajuria R et al<sup>11</sup>, Sharma P et al<sup>7</sup> reported an incidence of 52.3% and 56.9% in their studies somewhat higher than our study.

According to studies by Baji s n et al<sup>5</sup> and Shakera NB et al<sup>1</sup> the incidence of reactive lymphadenitis gradually showed a down trend in sixth decade and malignant lesions took over .Our study also documented higher number of malignancy, in the age group of 50-80 yrs. Our observation showed cervical lymph nodes with malignant deposits in 14 cases(77.8%). The common malignancy metastasizing to lymph nodes was deposits of Squamous cell Carcinoma and most them were arising from areo digestive tract. Most of the metastatic deposits 12cases (66.6%) were from squamous cell carcinoma and our findings correlated with the studies by Hemalatha et al <sup>7</sup> and Patel et al <sup>7</sup> and males were commonly affected in our study which were similar to findings studied by Mainali N and Suwal RB<sup>3</sup> and Mohanthy R et al<sup>8</sup>. And the rest of the 2cases showed each was adenocarcinomatous deposits(5.6%) and Poorly differentiated carcinoma(5.6%) in our study which was similar to study Badge et al <sup>7</sup>Anirudha V et al <sup>5</sup> thus FNAC plays a important tool in detecting metastatic deposits in lymphnodes by giving a clue regarding the primary origin and helps in further management of the conditions.Lymphoproliferativedisorder was observed in 4 cases(22.2%) of which Non- Hodgkin's lymphoma comprising 3cases (16.6%)and 1 case of Hodgkin's lymphoma(5.6%) as shown in Fig 7 which was similar to results found by Janagam C et al<sup>13</sup>,Sharma R.I. et al<sup>14</sup>.

**CONCLUSION-**

A myriad of causes for cervical lymphadenopathy can be detected by FNAC which is a simple and rapid diagnostic technique . In our study FNAC helped to diagnose the benign as well as malignant lesion and also provided definite diagnosis in lymph node aspirates where biopsies are not commonly done. This study also highlights reactive hyperplasia has surpassed Tuberculous lymphadenitis to become the most common cytological diagnosis .Hence FNAC can be used as screening tool for lymphadenopathy for all ages patients and future mode of treatment can be ascertained within a short time to anxious patient .

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