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SPECTRUM OF SUPRACLAVICULAR LYMPH NODE ON FINE NEEDLE ASPIRATION CYTOLOGY: A ONE–YEAR STUDY IN A TERTIARY CARE HOSPITAL IN UPPER ASSAM

Pathology

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ABSTRACT

Introduction: Supraclavicular lymphadenopathy is frequently associated with significant underlying pathology. Fine Needle Aspiration Cytology (FNAC) serves as a cost-effective, rapid, and minimally invasive diagnostic method that plays an essential role in the initial evaluation of lymph node lesions. This study analyses the spectrum of supraclavicular lymph node lesions diagnosed via FNAC in a tertiary care centre in Upper Assam over a one-year period. **Methods:** This retrospective observational study was conducted in the Department of Pathology, Assam Medical College and Hospital, Dibrugarh, included 50 patients presenting with supraclavicular lymphadenopathy who underwent FNAC from January to December 2024. FNAC was performed using a 23-gauge needle. Smears were stained with May-Grünwald-Giemsa (MGG) and special stains like Ziehl-Neelsen were applied when indicated. Cytological diagnoses were categorized into reactive lymphadenitis, Acute suppurative lymphadenitis, granulomatous lymphadenitis, metastatic malignancy, lymphoma, and miscellaneous cases. **Results:** Out of 50 cases, 66% were male and 34% female. Metastatic malignancy was the most common diagnosis (50%), followed by granulomatous lymphadenitis (24%) and reactive lymphadenitis (18%). Left-sided lymphadenopathy was more frequent (60%). Most metastatic cases occurred in the age group of 40–80 years. **Conclusion:** FNAC is a dependable and cost-effective diagnostic tool in evaluating supraclavicular lymphadenopathy. In this study, metastatic malignancies were the leading cause, especially in older adults. The technique is invaluable for early diagnosis and directing further investigations and treatment.

KEYWORDS

Supraclavicular lymph node, FNAC, metastasis, granulomatous lymphadenitis, squamous cell carcinoma, adenocarcinoma

INTRODUCTION

Supraclavicular lymphadenopathy is a common clinical presentation, often prompting investigation for serious underlying conditions. In both young adults and the elderly, such lymphadenopathy may be due to reactive changes, infections such as tuberculosis, or a first sign of malignancy.[1]

FNAC has gained wide acceptance as an initial diagnostic procedure due to its affordability, simplicity, and rapid turnaround. In resource-limited settings like Upper Assam, where both infectious diseases and malignancies are prevalent, FNAC of supraclavicular nodes becomes especially significant. In select cases, radiologically guided FNAC further improves accuracy.[2]

This study was undertaken to assess the cytological spectrum of supraclavicular lymphadenopathy using FNAC over a one-year period at Assam Medical College and Hospital, Dibrugarh.

AIM

To assess the cytological spectrum of supraclavicular lymphadenopathy through FNAC in a tertiary care hospital in Upper Assam.

MATERIALS AND METHODS

This retrospective study was conducted in the Department of Pathology, Assam Medical College and Hospital, Dibrugarh. Data were collected for all patients presenting with supraclavicular lymphadenopathy who underwent FNAC from January 2024 to December 2024.

A total of 50 cases were included. Aspirations were done using a 23-gauge needle and 10 mL disposable syringe. Smears were stained with May-Grünwald-Giemsa (MGG) and Papanicolaou stain. Ziehl-Neelsen staining was performed when tuberculosis was suspected. Inadequate aspirates were excluded.

Based on cytomorphology, the cases were categorized into six groups:

- Reactive lymphadenitis
- Acute suppurative lymphadenitis
- Granulomatous lymphadenitis
- Metastatic malignancy
- Lymphoma
- Miscellaneous/non-specific

RESULTS

Table 1: Distribution of FNAC Diagnosis of 50 Cases of Lymphadenopathy

Cause	Male	Female	Number of Cases	Percentage
Metastatic	17	08	25	50%
Granulomatous	08	04	12	24%
Reactive	06	03	09	18%
Lymphoma/ Lymphoproliferative Disorder	01	01	02	4%
Suppurative	01	00	01	2%
Inconclusive	00	01	01	2%

Out of 50 patients, 33 (66%) were male and 17 (34%) were female. The most common diagnosis was metastatic malignancy, seen in 25 cases (50%), followed by granulomatous lymphadenitis in 12 cases (24%) and reactive lymphadenitis in 9 cases (18%).

The most frequent site of involvement was the left supraclavicular lymph node (60%).

Table 2: Age Distribution of Lymph Node Lesions

Cause	<20	21-40	41-60	61-80	>81	Total
Metastatic	0	01	10	11	03	25
Granulomatous	01	06	04	01	00	12
Reactive	01	04	03	01	00	09
Lymphoma/ Lymphoproliferative Disorder	00	00	00	02	00	02
Suppurative	00	01	00	00	00	01
Inconclusive	00	00	01	00	00	01

The ages of the patient ranged from 11 years to 88 years. Metastatic malignancy was most common in the age group of 40–80 years.

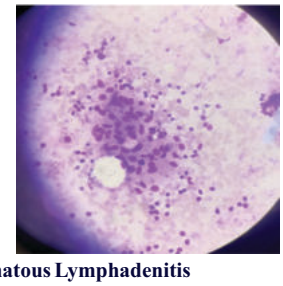

Fig 1- Granulomatous Lymphadenitis

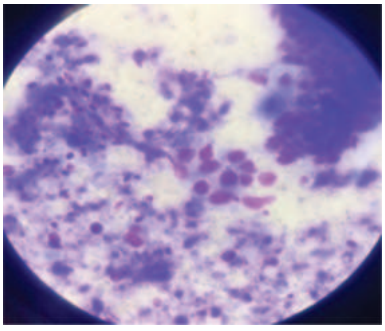

Fig. 2 Metastasis of Squamous Cell Carcinoma in Lymphnode

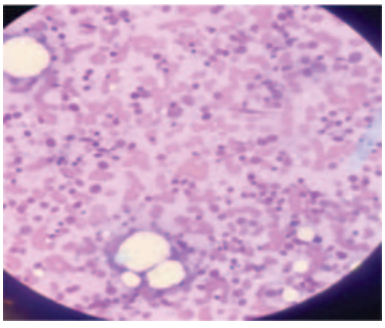

Fig- 3 FNAC of Lymph Node Showing Lymphoma

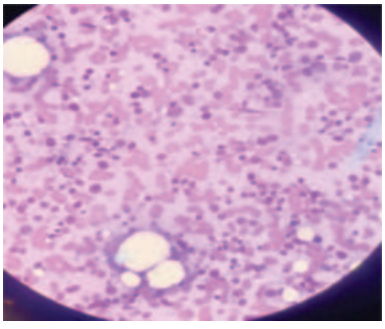

Fig – 4 Metastasis of Adenocarcinoma in Lymphnode

DISCUSSION

Metastatic-

Present study - 50% (25/50) of cases.
Literature: 65.1 % (Radhakrishnan et al.)[3] and 79.7% (Mitra et al.)[4]
Interpretation: In the present study, the most common cause of supraclavicular lymphadenopathy was metastatic malignancy. The majority of metastatic cases were seen in the 40–80 years age group.

Granulomatous Inflammation

Present study: 24% (12/50) of cases
Range: 8.8 % (Radhakrishnan et al.)[3] and 14.2% (Mitra et al.)[4]
Interpretation: Among these, 7 cases were confirmed as tuberculous on the basis of cytological features and Ziehl-Neelsen staining. The relatively high incidence in our study reflects the endemic nature of tuberculosis in Upper Assam.

Reactive Lymphadenopathy

Present study: 18 % of cases
Literature: 22 % (Radhakrishnan et al.)[3]
Interpretation: This percentage is lower than that reported in other studies, which may be due to the fact that supraclavicular nodes are less commonly involved in localized inflammatory responses.

Lymphoma

Present study: 4 %
Range: 5 % (Mitra et al.)[4]
Interpretation: Both cases were provisionally diagnosed as non-Hodgkin lymphoma on cytology and were referred for further evaluation including biopsy and immunophenotyping.

CONCLUSION

The present study was conducted over a one-year period and included 50 cases of supraclavicular lymphadenopathy evaluated by fine needle aspiration cytology (FNAC). The most common cytological diagnosis was metastatic malignancy, observed in 50% (25/50) of cases, followed by granulomatous lymphadenitis in 24% (12/50) and reactive lymphadenitis in 18% (9/50). Lymphoma, suppurative lymphadenitis, and nonspecific categories were seen in 4%, 2%, and 2% of cases respectively.

The findings highlight the predominance of malignancy among supraclavicular lymph node enlargements, especially in the elderly population. The significant proportion of granulomatous lesions, including confirmed cases of tuberculosis, reflects the persistent endemic nature of the disease in Upper Assam.

FNAC proved to be a simple, rapid, and cost-effective diagnostic tool that enabled early detection and categorization of lymphadenopathy. Its role remains indispensable in guiding clinical decisions and avoiding unnecessary surgical interventions, particularly in resource-limited settings.

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