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### Original Research

## Cytological spectrum of lesions involving supraclavicular lymph nodes: Experience from a Tertiary Care Centre

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#### ABSTRACT

**Aim:** This study was taken up with the aim to investigate the pattern of supraclavicular lymphadenopathy among patients referred to Pathology Department GMC, Jammu and to evaluate the diagnostic efficacy of fine needle aspiration cytology (FNAC). **Materials and Methods:** Data of 185 patients who were subjected to FNAC following presentation of supraclavicular lymphadenopathy was collected from Department of Pathology, GMC, Jammu over one year (August 2016 to July 2017). Since in 18 patients as either the aspirate was inadequate or the opinion was equivocal, we analyzed the remaining 167 cases.

**Results:** The right supraclavicular lymph node was enlarged in 52% cases, while the left supraclavicular lymph node alone was palpable in 41.3% cases and in 6.7% of cases, bilateral supraclavicular lymph nodes were palpable. Malignant pathology accounted for 82.6% (138/167) of the cases. These were mostly cases of metastatic squamous cell carcinoma (74/167, 44.3%), adenocarcinoma (46/167, 27.5%), small cell carcinoma (19/167, 11.4%) and lymphoma (18/167, 10.7%). There were 29 (17.4%) cases of tuberculosis. **Conclusion:** Enlarged supraclavicular lymph node is an important sign of some serious underlying pathology. FNAC is an excellent first line of investigation due to its low cost, simplicity, specificity and minimal invasiveness.

**Key words:** Fine needle aspiration cytology; metastatic carcinoma; supraclavicular lymph nodes.

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#### INTRODUCTION

Enlarged lymph nodes were the first organs to be diagnosed by Fine Needle Aspiration Cytology (FNAC); they are one of the most frequently sampled tissues.<sup>1</sup> Lymph nodes are the most common target organs where FNAC is performed, because of their wide distribution and easy accessibility. Lymph node aspiration is of great value for diagnosis of lymphadenitis, lymphomas and metastatic carcinoma.<sup>2,3</sup> FNAC is a simple, minimally invasive investigative procedure, producing speedy result and is inexpensive with low complication rate.<sup>4</sup> The material obtained from FNA can be used for diverse group of special techniques like cytochemistry, bacteriological culture,

immunocytochemistry, ultra structural studies and molecular hybridization.<sup>5</sup>

Supraclavicular lymph nodes are also known as “sentinel nodes” because of their accessibility to be palpated and their affinity for metastases. In many instances, a sentinel lymph node is the first sign of an underlying malignancy in the thoracic cavity, abdominal cavity or pelvic region.<sup>6</sup> A variety of benign and malignant conditions presenting as supraclavicular lymphadenopathy can be diagnosed by FNAC. FNAC plays a crucial role in the evaluation of enlarged supraclavicular lymph nodes and its importance has been established in many studies.<sup>7-11</sup>

## MATERIALS AND METHODS

This is a retrospective study carried out in Department of Pathology, GMC, Jammu. All FNAC reports and smears of palpable supraclavicular lymph node from August 2016 to July 2017 was retrieved from cytology section. They were reviewed for age, sex, laterality, cytomorphology, and diagnosis. Cases in which, aspirate was inadequate or results equivocal were excluded from the study. Smears were routinely stained with Giemsa and special stains applied wherever needed. Standard guidelines for cytological diagnosis were followed.<sup>12</sup> The cytological diagnosis from each case was based on cytomorphology and available clinical information. The results were categorized as reactive, tuberculosis, lymphoma or metastasis.

## RESULTS

In this study, data of 167 patients who were subjected to FNAC for supraclavicular lymph node enlargement was analysed. The male-to-female ratio in the study was 1.3:1, and more patients had right-sided nodal enlargement (right: left: 1.2:1). The mean age at presentation was 53.3 years. The age at presentation ranged from 18 to 75 years. Malignant pathology accounted for 82.6% (138/167) of the cases. These were cases of metastatic squamous cell carcinoma (74/167, 44.3%), adenocarcinoma (46/167, 27.5%), small cell carcinoma (19/167, 11.4%) and lymphoma (18/167, 10.8%). There were 29 (17.4%) cases of tuberculosis, majority of which involved patients up to 40 years of age. However, cases of malignancy were markedly predominant in patients above 30 years age. Reactive hyperplasia was diagnosed in 7 (4.2%) patients, while only 3 (1.8%) patients had acute non-specific lymphadenitis.

## DISCUSSION

FNAC being a simple and rapid diagnostic procedure, is routinely used as first line of investigation for assessing lymph node enlargement particularly metastatic lymphadenopathy.<sup>13</sup> In our study, supraclavicular lymph nodes were commonly involved by metastatic tumors (138/167:82.6%) which is comparable to studies done in India and other countries.<sup>11,14,15</sup> This can be attributed to vast lymphatic drainage by supraclavicular lymph node from thoracic, abdominal, and pelvic organs which serve as a seat of malignancy in old age. The age at presentation ranged from 18 to 75 years. The incidence of malignancy rose dramatically with increasing age especially after 60 years of age and so in all the elderly patients who present with supraclavicular lymphadenopathy, FNAC must be performed to look into any early clue of underlying pathology.<sup>14</sup> Commonest primary sites include the lungs, nasopharynx, stomach, breast etc., These findings corroborate with those of earlier studies.<sup>11,16</sup> Squamous

cell carcinoma (74/167,44.3%) was the most common metastatic tumor in our study which was similar in study conducted by Mitra et al.<sup>14</sup> Adenocarcinoma (46/167,27.5%) was found to be the second most common malignant condition followed by small cell carcinoma (19/167,11.4%) which was contrary to study conducted by Laishram et al in which adenocarcinoma was found to be the most common malignancy in supraclavicular lymph node pathology.<sup>17</sup> Tuberculosis was found to be the most common non malignant condition with 17.4% (29/167) cases which correlates with other comparable studies done in other parts of India.<sup>11,14</sup> The age of presentation of Tuberculosis ranged from 18 years to 75 years (mean age = 34.5 years). Most cases were seen in the 3rd and the 4th decade of life.

Lymphoma was diagnosed in 18 patients (18/167,10.8%) and non selective reactive hyperplasia was diagnosed in 7 (4.2%) patients, while only 3 (1.8%) patients had acute non-specific lymphadenitis. Laishram et al reported 39 (15.3%) cases of non specific reactive lymphadenitis and 7 cases of lymphoma (2.7%) in his study which was in contradiction to our study. All cases of lymphomas presented with multiple lymph node enlargements. It is clear from the present study that supraclavicular lymph nodes are frequently enlarged by metastatic tumors followed by tuberculosis. The pattern of various diseases in supraclavicular lymph node in relation with different parameters is well documented. This will facilitate pathological reporting and aid clinicians to make focused investigation and plan appropriate treatment.

## CONCLUSION

Based on our study, we feel that FNAC of palpable supraclavicular lymph nodes is a cost effective and accurate investigative technique that is also useful in saving patients from unnecessary biopsies and helps in diagnosis and deciding appropriate management of various lesions.

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