

## Original Research Article

## A cytological study of enlarged supraclavicular lymph nodes through fine needle aspiration

Shilpi Singh<sup>1</sup>, Anita Omhare<sup>2</sup>, Rajeev Ranjan<sup>3</sup>, Indushri<sup>4\*</sup>, Deepa Rani<sup>5</sup>, Rajni Bharti<sup>6</sup><sup>1</sup>Assistant Professor, Department of Pathology, Government Medical College Kannauj, U.P, India<sup>2</sup>Associate Professor, Department of Pathology, Government Medical College Kannauj, U.P, India<sup>3</sup>Assistant Professor, Department of Pathology, Government Medical College Kannauj, U.P, India<sup>4</sup>Assistant Professor, Department of Anatomy, Government Medical College Kannauj, UP India<sup>5</sup>Professor, Department of Pathology, Sarojini Naidu Medical College Agra, UP, India<sup>6</sup>Professor, Department of Pathology, Sarojini Naidu Medical College Agra, UP, India

Received: 01-11-2021 / Revised: 04-12-2021 / Accepted: 03-01-2022

**Abstract**

**Background:** Enlargement of supraclavicular lymph node is due to many pathological condition such as inflammatory, hematolymphoid neoplasm and metastasis but most of the studies shows metastasis is a commonest cause. **Objectives:** To study the cytomorphological features in aspirate obtained and render cytodiagnosis and thus delineate the cause of supraclavicular lymph node enlargement in our setup. **Material and Method:** This study was carried out in the department of pathology, Sarojini Naidu Medical College, Agra for a period of 2 years. The FNAC slides were studied for cytomorphological features. **Result:** All age group patients were included in the study and male to female ratio of 1.4:1. The maximum number of cases were malignant (58.75%) followed by granulomatous/ tubercular (33.75%), reactive hyperplasia (2.50%), acute suppurative lymphadenitis (2.50%). 2.50% cases were inadequate. **Conclusion:** It is concluded that FNAC of enlarged supraclavicular lymph node is safe, convenient and rewarding procedure. It also reduces the need of surgical biopsies and thereby reducing cost and time for final diagnosis.

**Keywords:** Fine Needle Aspiration Cytology, Supraclavicular lymphadenopathy.

This is an Open Access article that uses a funding model which does not charge readers or their institutions for access and distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>) and the Budapest Open Access Initiative (<http://www.budapestopenaccessinitiative.org/read>), which permit unrestricted use, distribution, and reproduction in any medium, provided original work is properly credited.

**Introduction**

Fine Needle Aspiration Cytology (FNAC) is a procedure to obtain cells and tissue fragments through a needle introduce into abnormal tissue (swelling) and it's study [1]. FNAC is a simple, safe, speedy, cost –effective, accurate and more diagnostic after advancement of imaging technique [2]. The simplicity and safety of the FNAC make it a useful procedure for the initial evaluation of supraclavicular lymphadenopathy [4]. The majority of studies reveal a malignant cause is most common for palpable supraclavicular lymph nodes. The present study further emphasizes the use of FNAC as a first line investigation for the evaluation of enlarged supraclavicular lymph nodes [3].

**Material and Method**

The material was obtained from outdoor and indoor patients of all age group referred to cytology lab in the Department of Pathology at Sarojini Naidu Medical College Agra during the period of January 2011 to December 2012 (Two Years). Institutional ethical clearance was taken before start of study.

Enlarged supraclavicular lymph node was aspirated by using a 22 G needle attached to 20 ml. disposable BD syringe. The aspirated material was expressed on slides, smear prepared, dried, fixed in methanol and stained with MGG stain. Other stains used were papanicolaou and whenever needed Z-N stain. After that smears were examined for adequacy and cytomorphological features.

**Result:**

This study analyzed 80 cases of enlarged supraclavicular lymph node. All age group patients were included male to female ratio 1.4:1. Out of 80 cases 78 cases were adequate for evaluation while 2 cases showed blood only after repeated attempt. 35 cases (43.75%) were metastatic and 12 cases (15%) of hematolymphoid neoplasm [Fig-2]. So most common cause of supraclavicular lymphadenopathy was malignant (58.75%) Enlargement of supraclavicular lymph nodes due to malignancy was more common in male compare to female while granulomatous /tubercular lymphadenitis [Fig-1] in female. In metastatic lesion adenocarcinoma [Fig-3] was most common followed by small cell carcinoma.

\*Correspondence

**Dr. Indushri**

Assistant Professor, Department of Anatomy, Government Medical College Kannauj, UP India

E-mail: [indishri2k@gmail.com](mailto:indishri2k@gmail.com)

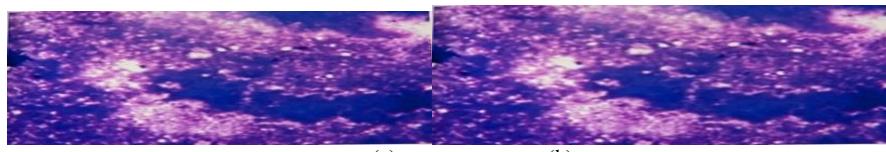


Fig 1: Tuberculous Lymphnode showing necrosis (a) and epithelioid granuloma (b)

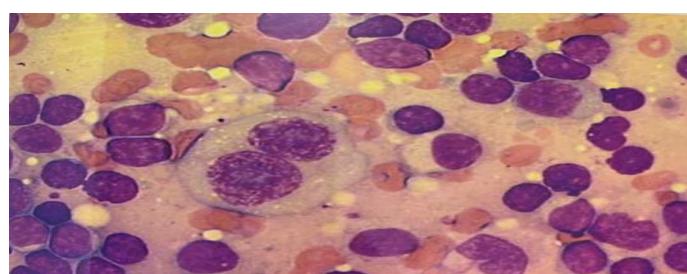


Fig 2: Hematolymphoid neoplasm (Hodgkin's lymphoma showing Reed Sternberg

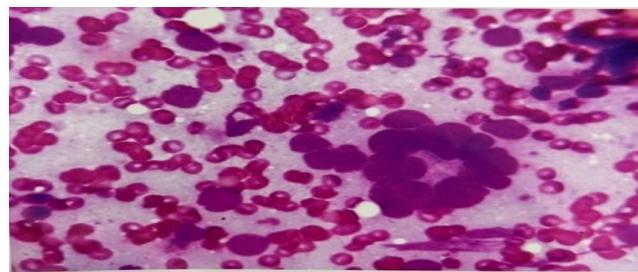


Fig 3: Metastatic adenocarcinoma showing acini

Table 1: Various lesion on the base of cytomorphological features

Various Lesion	No. Of Cases	Percentage N=80
Reactive hyperplasia	02	2.50%
Acute suppurative lymphadenitis	02	2.50%
Granulomatous/Tuberculous lymphadenitis	27	33.75%
Hematolymphoid neoplasm	12	15%
Metastatic	35	43.75%
Inadequate	02	2.50%
Total	80	100%

Table 2: Age wise distribution of various Lesions

Lesions	0-15 Years	15-45 Years	>45 Years	Total
Reactive hyperplasia	00	01	01	02
Acute suppurative lymphadenitis	00	02	00	02
Granulomatous/ Tuberculous	03	20	04	27
Hematolymphoid neoplasm	03	04	05	12
Metastatic	00	05	30	35
Inadequate	02	00	00	02
Total	08	32	40	80

Table 3: Site wise distribution of various lesions

Sr. No.	Various lesions	Right	Left	Bilateral
1	Metastatic lesions	14	20	01
2	Hematolymphoid	05	05	02
3	Reactive hyperplasia	01	01	00
4	Acute suppurative lymphadenitis	01	01	00
5	Granulomatous\ Tuberculous lymphadenitis	12	15	00
6	Inadequate	01	01	00
7	Total	34	43	03

**Discussion**

FNAC is simple, safe, reliable cost effective diagnostic tool for evaluation of enlarged supraclavicular lymph node. Adequacy of present study was 97.2% compared with (94%) Mitra S et al [7]. Present study and previous studies[3,7,11] shows left site more commonly involve than right except Kanetkar et al[10]. In our study male to female ratio 1.4:1 which was similar to previous studies Adhikari RC et al [6]. Mitra S et al [7].and Radhakrishnan D et al.[11] Above all these studies show males are more commonly involve, except one study Kanetkar SR et al.[10] had male to female ratio 1:2. The present study showed frequency of reactive hyperplasia in 2.5 % cases which was lower to previously published studies [6,3,7,10]. The percentage of acute suppurative lymphadenitis (2.50%) in present study was almost comparable to other studies [3,9,11] except Altaf et al [8] and Kanetkar et al [10]. studies which observed 11.5%,20.37% respectively. The present study observed a frequency of 35% cases of granulomatous/ tubercular lesions. our study matched with adhikari RC et al [6] study that is 35.1%. Other studies reported a wide Variation in frequency from present study that is 13.5%, Gupta N et al [3], 14.2% Mitra S et al [7], Kanetkar et al[10] 14.8% and Radhakrishnan et al[11] 8.8%. The frequency of hematolymphoid neoplasm was high in present study (15%) as compared to adhikari RC et al [6]. 4.5% and Mitra S et al [7]. 5.1%. The Frequency of metastatic lesion (43.75%) was comparable to Gupta RK et al [5] 41.3%., Adhikari RC et al [6] 44.9% and Kanetkar et al[10] had 44.4%. Gupta N et al [3]. Study showed 64% cases, Mitra S et al [7] study 68.5% had more malignant cases because both studies were done in tertiary center. Nasuti JF et al [4] also had more malignant cases (63%) because study was done in developed country where tuberculosis is not more common.

**Conclusion**

FNAC of enlarged supraclavicular lymph node is a safe, easy, cost effective, time saving, rewarding procedure. Present and previous studies show malignancy is a major cause of supraclavicular lymph node enlargement.

**Acknowledgement**

I would like to express my profound gratitude to all the participants.

**References**

1. Kun M. A new instrument for diagnosis of tumours. Monthly J Med Sci. 1846;7:853.
2. Martin HE, Ellis EB. Biopsy by needle puncture and aspiration. Ann Surg. 1930;92:169-181.
3. Gupta N, Rajwanshi, Srinivasan R, Nijhawan R. Pathology of supraclavicular lymphadenopathy in Chandigarh, north India : an audit of 200 cases diagnosed by needle aspiration. Indian Journal of Cytopathology. 2006;17(2):94-6.
4. Nausti JF, Mehrotra R, Gupta PK. Diagnostic value of fine needle aspiration in supraclavicular lymphadenopathy : a study of 106 patients and review of literature. Diagn Cytopathol. 2001;25(6):351-5.
5. Gupta RK, Naran S, Lalu S, Fauck R. The diagnostic value of FNAC in the assessment of palpable supraclavicular lymph nodes : a study of 218 cases. Indian Journal of Cytopathology. 2003;14(4):201-7.
6. Adhikari RC, Jha A, Sayami G, Shrestha S, Sharma SK. Fine needle aspiration cytology of palpable supraclavicular lymph nodes. Journal of Pathology of Nepal. 2011;1:8-12
7. Mitra S, Ray S, Pradip K Mitra. Fine needle aspiration cytology of Supraclavicular lymph nodes: our experience over a three year-period. Journal of Cytology. 2011;28(3):108-110
8. Altaf Hussain Talpur, Abdul Aziz Laghari, Arshad Mahmood Malik, Ahmad Khan. Role of FNAC versus histopathology in diagnosis of various body lumps. J Liaquat Uni Med Health Sci. 2007;6(3):103-08.
9. Haque MA. Evaluation of fine needle aspiration cytology of lymph nodes. Mymensingh Medical Journal. 2003;12(1):33-5.
10. Kanetkar SR, Shukla DB, Kale PP, Hulwan AB. Supraclavicular Lymphadenopathy: Cytopathological study of 3 years with Review of Literature JMSCR. 2017;5(11):31078-31084
11. Radhakrishnan D, Nair RG, Sathi PP, Verma KR. Fine Needle Aspiration Cytology of Supraclavicular Lymph node- Three year retrospective study. J. Evid. Based Med. Healthc. 2018;5(6):522-526

**Conflict of Interest: Nil**

**Source of support: Nil**