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ORIGINAL ARTICLE

ROLE OF FNAC IN THE EVALUATION OF CERVICAL LYMPH NODES: A HOSPITAL BASED STUDY

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ABSTRACT: Background: Cervical Lymphadenopathy is one of the commonest clinical presentation in all ages. They are frequently involved in regional and systemic diseases ranging from infection, inflammation, immune related and neoplastic conditions. Fine needle aspiration cytology to assess the cytomorphology of Lymph nodes is regularly done by Pathologists. FNAC helps to diagnose multiple lesions avoiding biopsy. It is a simple and rapid diagnostic test, economic, primary investigation with minimal trauma easily carried out in OPD. Objective: To study the role of FNAC in evaluation of cervical Lymphadenopathy **MATERIAL AND METHOD:** This retrospective study was conducted from records of 6 years from Jan.2005-Dec.2010. All patients who presented with enlarged cervical lymph node/nodes were included in the study. Written informed consent was obtained from all patients. Total 1195 cases of cervical lymphadenopathy were studied. Hypocellular and acellular smears were discarded. FNAC was done with 22-24 gauge disposable needle using 20 ml. syringe. The smears were dried and stained with MGG. **RESULTS:** Total 1195 cases of cervical lymphadenopathy were studied. Maximum number of cases were 21-30 years age group. Males were more than the females. Patients below 15 years constituted 32.5 % cases. Maximum cases reported were of Tubercular lymphadenitis followed by Reactive Lymphadenitis. Squamous cell carcinoma was the commonest metastatis.02 cases were discarded due to hypocellularity and non-availability of clinical details. **CONCLUSION:** FNAC is first line diagnostic, cost effective and easy procedure yielding quick and mostly definite results. Biopsy now follows FNAC.

KEYWORDS: Fine Needle Aspiration Cytology, Lymph Nodes, Cervical, Lymphadenopathy.

INTRODUCTION: Lymph nodes are most widely distributed and easily accessible component of lymphoid tissue.[1, 2] Aspiration of lymph nodes for diagnostic purposes was first done by Griey and Gray in 1904 in patients with Sleeping sickness.[2] Enlarged palpable Cervical Lymph nodes are common and worrying presentation in adults as well as children.[3,4] Cervical Lymphadenopathy is defined as cervical lymph nodal tissue measuring more than 1 cm. in diameter.[5] Cervical lymph nodes are involved most often in all types of lymphadenopathy.[1,3] Lymph nodes are among the commonest aspirated organ for diagnostic purpose.[2,6,7] FNAC is a reliable and least expensive method for developing countries for the investigation of lymphadenopathy.[1,2,5,6,7]

FNAC has become an acceptable and widely practised minimally invasive technique which is safe, simple, rapid and relatively pain free,[2,3,5,7] FNAC is highly cost effective and accurate as a first line investigate technique.[1,2,5,7,8] The few cells that are obtained from the lesion are often found sufficient,[8] and offer immediate preliminary diagnosis in the investigation of lymphadenopathy with minimal trauma to the patient.[1,4,8,9] The study done by Haque and Talukder concludes that before resorting to surgical intervention FNAC is a helpful procedure in the diagnosis of both neoplastic and non-neoplastic lesions.[7,10]

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There is no evidence that the tumor spreads through the skin tract created by the fine hypodermic needle used in the technique. FNAC can be both diagnostic and therapeutic in cystic swellings.

AIMS AND OBJECTIVES: The present baseline study was undertaken to study the role of FNAC in evaluation and cytomorphological patterns of Cervical Lymphadenopathy in Gajra Raja Medical College, Gwalior. Objectives of the study were to know the:

a) Incidence of cervical lymphadenopathy.
b) Age range.
c) Incidence in <15 years old.
d) Male: female ratio.
e) Site and side of Lymph node.
f) Common disease and their frequency in cervical lymph node.

MATERIAL AND METHODS: This retrospective study was conducted from 6 years records i.e. Jan. 2005 Dec. 2010 in Cytopathology section of Department of Pathology, G.R. Medical College and J.A. Group of Hospitals, Gwalior (M.P.). All patients presenting with enlarged cervical lymph nodes were included in the study. Brief History including age, sex, site, side and thorough clinical examination was carried out. The FNAC was done in 1195 consecutive patients with clinically significant cervical lymphadenopathy by trained and experienced faculty using 20-24 G needle without local anaesthesia.

Needle was inserted up to the desired depth into the lymph node and firm suction was applied to create negative pressure in the syringe. When an adequate quantity of cellular material was withdrawn, suction was gently released to equalise pressure to prevent sucking of aspirated material into barrel of syringe against walls. A minimum of two well labelled glass smears were prepared. The smears were air dried and stained with MGG stain according to standard procedure. Review of all cytological reports were done according to standard guidelines and the diagnosis was classified and correlated with patient age and sex to explore the pattern and association.

RESULTS: Total 7870 FNACs were performed in 6 years. Of these 1195 cases were of cervical lymphadenophathies. The Incidence of cervical lymphadenopathy was 15.18% of all cases. In this study, total males were 620 & females were 545. The male: female ratio was 1.31:1. Number of patients of age 15 years or less were 389 i: e 32.5% of all patients of cervical lymphadenopathy. The youngest patients of the study was 1 month old female reported as reactive lymphadenitis and the oldest patient was 84 years old, which was a case of tubercular lymphadenitis. Maximum patients were of the age group 21-30 years. Upper deep cervical lymph nodes constituting 461 cases (38.57%) followed by Submandibular gland 311 cases (26.02%) were the commonest lymph nodes aspirated. Total 205 cases were bilateral in presentation (17.15%), Unilateral involvement reported in 82.85% cases of which 560 cases were right sided and 430 left sided lymph node involvement.

Of all these, maximum cases reported were Tubercular Lymphadenitis i.e 55.5% of all cases, followed by Reactive lymphadenitis i:e 20.92%, Metastatic Lymphadenitis 10.5%, Chronic non-specific lymphadenitis 8.7%, Acute suppurative lymphadenitis 2.9%, Lymphomas 1.25% and 0.16% cases where no opinion was possible. Amongst the metastatic cases, 114 cases (9.53%) cases were squamous cell carcinoma cell carcinomas, 10 cases (0.83%) adenocarcinoma & 02 cases (0.16%)

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were anaplastic carcinoma. Total 15 cases of Lymphoma were reported. 12 cases (1.0%) were NHLs and 03 cases (0.25%) were reported as Hodgkins Lymphoma.

DISCUSSION: FNAC is defined as using a fine needle to remove sample of cells from suspicious masses for diagnostic purposes. Fine needle aspiration cytology has revolutionized the diagnosis of lymphadenopathy, decreasing the morbidity of excisional or incisional biopsy of lymph node[1] especially in developing countries like INDIA with limited financial & health care resources. Majority of enlarged lymph nodes represent benign, reactive or inflammatory process. A major proportion of lymphadenopathies in this study were also due to benign conditions (88% cases). This is in accordance with the studies by Ahmad S et al in which 86.4% lesions were benign.[11] Male preponderance was noted similar to other studies.[5,12] Unilateral involvement of cervical lymph nodes is common 82.85% in our study similar to study in Jorhat, Assam.[5] In this study, the main cause of lymphadenopathy had been tuberculosis, 663/1195 (55.5%) and the second commonest cause being reactive lymphadenitis 354/1195 (20.92%).The results are consistent with similar studies done by Sharma M.[5,7] and others.[9,13,14]

Tuberculosis is a widely prevalent disease in our country. Bailey et al and Al Nousairy showed that T.B. is most common in developing countries affecting cervical lymph nodes.[1] There were no biopsies done as the cytological results were convincing and correlating with the clinical diagnosis. In this study 55.5% cases of T.B. were seen. Other previous studies showed this condition varying from 28% to 52 %. The predominance of cervical nodal involvement in tuberculosis has been established by many studies[9,15] which could be attriuted to infection of the tonsils and adenoids providing portal of entry. Tuberculosis was reported in 59% male patients in this study. Tuberculous lympha-denopathy is the commonest manifestation of extra-pulmonary tuberculosis where cervical groups of lymph nodes are most frequently involved.

The disease has been found relatively more prevalent in young individuals and runs a protracted course with period of remissions and exacerbations.[9] 250/1195 (20.92%) cases were of reactive hyperplasia. Stain and Nasuti et al and Nada had 23%, 32% and 54.2% cases diagnosed as reactive hyperplasia respectively.[1] Total 8.70% cases were reactive non-specific lymphadenitis (104/1195 cases). Shakya G et al reported 50.4% of reactive non-specific lymphadenitis.[6] In our institute 11.75% of lymph node FNAC's yielded malignant diagnosis. 10.5% cases were metastatic and 1.25% Lymphomas. Other studies have found the incidence to vary from 5.8 to 25.03%. Wilkinson AR et al reported the incidence to be 15.4%.[8,12] Amongst metastatic cases, cervical group is most commonly involved and Squamous cell carcinoma is the commonest type reported.[1,7] Our study showed 114/1195 cases (90%) of metastatic squamous cell carcinoma, followed by adenocarcinoma, 10/1195 cases. In 2 cases (0.16) no diagnosis was made due to inadequate sampling and incomplete clinical details. This is within acceptable range of less than 10-15%.[16]

CONCLUSION: This study was undertaken with a view to evaluate the role of FNAC in diagnosis of Lymphadenopathies in cervical Lymph node. Cervical Lymphadenopathy is the commonest clinical presentation with varied aetiology. We can conclude from the present study that FNAC is a simple, rapid, inexpensive and well tolerated procedure for the diagnosis of cervical lymphadenopahty. It is useful and reliable in early diagnosis of neoplastic and non-neoplastic lesions avoiding the need of biopsy and helps planning surgery for malignant cases, where definitive operative intervention can be performed in one session.

It has an important role in rural and semi-urban areas with less facilities and for the poor. It is most accurate where there is a close cooperation between clinician, cytopathologist and radiologist.

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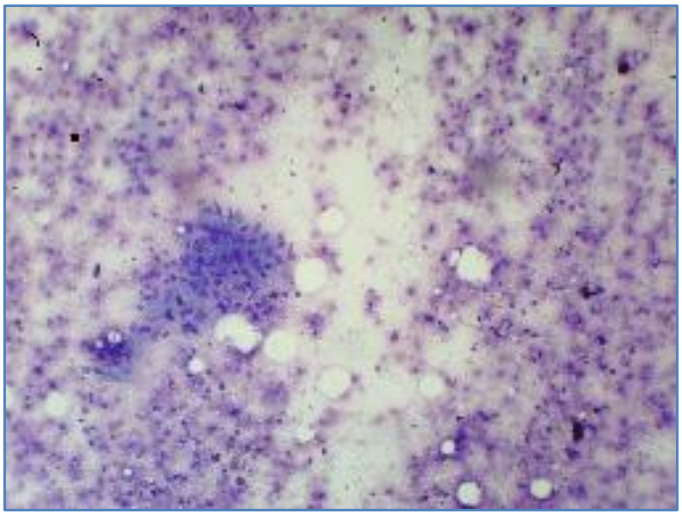

Fig. 1

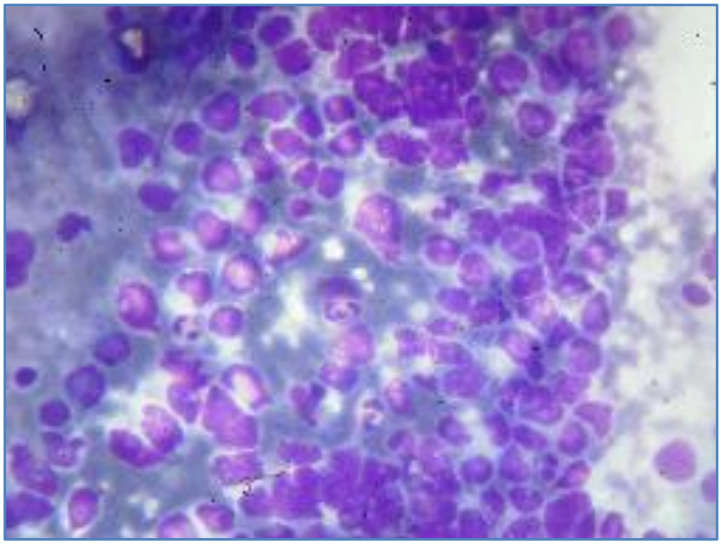

Fig. 2

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