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Cytomorphological evaluation of enlarged lymph nodes: A tertiary hospital-based study

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Abstract

Introduction
Lymphadenopathy is one of the commonly encountered clinical presentations and early targets for aspiration; therefore, it provides an important clue toward the diagnosis of the underlying etiology.

Patients and materials
The present study was conducted in a tertiary care hospital in North India among 201 patients who underwent fine-needle aspiration cytology (FNAC) after gaining their informed consent.

Results
In the study, most patients were males (52.73%), with a male-to-female ratio of 1:1.1. The age group ranged from 1 to more than 80 years, with most patients in the age group of 21–30 years followed by 0–10 years and the least in more than 80 years. Of 201 patients, nonneoplastic cases were 121, neoplastic cases were 66, and inadequate were 13.

Discussion
Fine-needle aspiration cytology of enlarged lymph nodes yields an important diagnostic clue to arrive at the final diagnosis.

Keywords: Fine-needle aspiration cytology, lymphadenopathy, neoplastic, nonneoplastic
accurate. Furthermore, the aspirated sample can be used for additional studies such as immunomarkers and histochemical studies [5].

The present study was conducted with the aim to study the different cytomorphological features associated with various LAPs and also to study the utility of FNAC in diagnosing the cause of LAPs.

**Patients and methods**

This is a prospective study, in which 201 patients were included. Ethical committee approval was taken. After explaining the procedure and obtaining an informed consent from the patient, FNAC of lymph nodes was performed. Patients were placed in a comfortable position in a couch depending on the location of the lesion, and lymph nodes were examined and palpated properly. The size of the swelling ranged from 0.1 cm to a few cm. A few were single, a few were multiple, and a few were matted as well. Under all aseptic precautions, a 23-G needle was introduced into the mass lesions, and aspirates were obtained by to-and-fro movement of the needle within the lesion. Smears were made immediately from the aspirate and stained by Giemsa and Papanicolaou (PAP) stains, using standard methods. Records of all the patients were reviewed for pertinent clinical history, and details of other investigations were noted. Relevant clinical history and details were noted and correlated accordingly.

**Results**

A total of 201 cases were included in our study. Of these, 106 (52.73%) were males and 95 (47.26%) were females, with a male: female ratio of 1.1:1, as depicted in Table 1.

The age group ranged from 1 to more than 80 years. Of these, majority of the patients were in the age group of 21–30 years followed by the age group of 0–10 years, whereas the least were in the age of more than 80 years. Among the male patients, majority were in the age group of 0–10 followed by 51–60 years, whereas majority of the female patients were in the age group of 21–30 years followed by 31–40 years (Table 1).

Some of the lymph nodes were single, some were multiple, whereas others were matted, and the size of the lesions ranged from 0.1 cm to few cm. The cervical lymph node was the most common site involved in the study \((n = 127)\) followed by the supraclavicular lymph node, whereas suprasternal was the least involved lymph node (Table 2).

Of 201 cases, nonneoplastic cases were 121, neoplastic were 67, and inadequate smears were 13 (Table 3). Of 121 nonneoplastic cases, 58 were reported as reactive lymphadenitis, 30 cases were of tubercular lymphadenitis, 26 were of granulomatous lymphadenitis, and seven cases were of abscess (Table 4). Of 67 neoplastic cases, 50 were metastatic, 16 were non-Hodgkin’s lymphoma, and one was Hodgkin’s lymphoma (Table 5 and Figs. 1–4).

**Discussion**

The present study included 201 cases presenting with LAP who underwent FNAC. Of 201 cases, 106 were male and 95 were females, with a male: female ratio of 1.1:1. The results were in accordance with the study by Suri et al. [2]. Moreover, the study conducted by Patra et al. [6] and Sarda et al. [7] showed similar results.

In our study, most cases were in the age group of 21–30 years. The results were similar to the studies by Bhida et al. [14], Ullah et al. [8], and Chawla et al [9].
Among the 201 cases in our study, 60.19% (n = 121) were nonneoplastic and 33.33% were neoplastic. Similar results were reported by the studies by Ahmed et al. [10] and Mohammad and Azadeh [11].

In our study, among the neoplastic lesions, metastatic deposits were most common (n = 50) followed by non-Hodgkin’s lymphoma (n = 16) and Hodgkin’s lymphoma (n = 1). The results were comparable to the findings of Jha et al. [12] and Arora and Arora [13].

In our study, reactive lymphadenitis was the most common nonneoplastic lesion (n = 58) followed by tubercular lymphadenitis and granulomatous lymphadenitis. The results were in accordance with the study by Bhida and colleagues.

**Conclusion**

FNAC remains the safe and gold standard investigation for arriving at the final diagnosis. It is a simple, easy, and reliable diagnostic tool that fills the gap between clinical evaluation and final pathological diagnosis.

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**Conflicts of interest**

There are no conflicts of interest.
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