Evaluation of fine needle aspiration cytology of cervical lymphadenopathy in Bir Hospital

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ABSTRACT

Background & Objectives: To correlate FNAC of cervical lymphadenopathy with the histopathology. Materials and Methods: Prospective study on 67 patients with cervical lymphadenopathy at the ENT Department, Bir Hospital, from January 2013 to July 2014. Patients were subjected to both FNAC and histopathology. Results: Thirty cases (44.8%) were females and 37 cases (55.2%) were males. Tuberculosis was most common disease in 30(44.80%) patients. Sensitivity, specificity, and diagnostic accuracy of FNAC to diagnose tubercular lymphadenopathies were 83.0%, 100.0%, and 92.54% respectively. Overall correlation of FNAC to histopathology was 86.57%. Conclusion: FNAC is very simple and accurate technique for diagnosis of cervical lymphadenopathy.

Key words: Cervical lymph nodes; FNAC; Histopathology; Reliability and accuracy.

INTRODUCTION

Lymphadenopathy is an abnormal increase in size and/or altered consistency of lymph nodes. Cervical lymphadenopathy is one of the commonest clinical presentations of outdoor clinics of otorhinolaryngology in most hospitals. The etiology varies from an inflammatory process to a malignant condition. Cervical lymphadenopathy is a common clinical finding, which can be related to reactive nodal hyper trophy, granulomatous processes, lymphoma and head and neck cancers or mimicked by nonnodal neck masses. Enlarged palpable cervical lymph nodes are common and worrying presentation in adults as well as in children.

Fine needle aspiration cytology (FNAC) has been advocated as a useful method in comparison to more expensive surgical excision biopsies in developing countries with limited resources. FNAC of lymph node has become an integral part of the initial diagnosis and management of patients with lymphadenopathy due to early availability of results, simplicity, and, minimal trauma with less complication.

Aims and objectives

The aim of this study is to correlate the results of FNAC of cervical lymphadenopathy with the histopathology in an attempt to highlight the diagnostic accuracy and reliability of FNAC of lymph nodes with an emphasis on discordant cases between the cytology and the histopathology.

MATERIALS AND METHODS

This is a prospective study on 67 selected patients with cervical lymphadenopathy and was conducted at the Otorhinolaryngology Department, National Academy of Medical Sciences, Bir Hospital, Kathmandu from January 2013 to July 2014.

Cervical nodal enlargement was the first clinical manifestation of the patients in all cases. Patients more or equal to 15 years of both genders were included. Patients with missing FNAC reports or those cases who could not undergo biopsy were excluded.

This study was limited to the selected cases that had undergone FNAC for the enlarged cervical lymph nodes, which were stained with Papanicolaou and Giemsa stain, followed by subsequent excisional biopsy of the same neck node with definitive histopathological diagnosis. All the slides were reviewed by the senior pathologist. In cases of discrepancy, histopathologic results were considered the gold standard. Sensitivity, specificity and accuracy of FNAC were analysed relative to histopathologic diagnosis.
Diagnostic sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV), accuracy, and discordance rate were analysed by SPSS Software (21.0) (Table.1). All these values were compared with other studies.

Table: 1 Interpretation of test results

<table>
<thead>
<tr>
<th>Test results</th>
<th>Diseased</th>
<th>Not Diseased</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test Positive</td>
<td>True Positive (TP)</td>
<td>False Positive (FP)</td>
</tr>
<tr>
<td>Test Negative</td>
<td>False Negative (FN)</td>
<td>True Negative (TN)</td>
</tr>
</tbody>
</table>

RESULT

Among the 67 studied cases with cervical lymphadenopathy that had undergone FNAC, 30 (44.8%) were females and 37 (55.2%) were males. The age ranged from 15-71 years with mean age of 38.09 years and majority of cases were in age group of 25-34 accounting for 28.4% (Table.2). Tuberculosis was most common disease found in 30(44.8%) patients, reactive lymphadenitis in 11 (16.4%), granulomatous in 10(14.9%), metastatic in 8(11.9%), Non-Hodgkin’s lymphoma in 5(7.5%), Hodgkin’s lymphoma in 2(3.0%) and chronic inflammatory lesion in 1(1.5%) (Fig.1). The sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy of FNAC of lymphadenopathies to diagnose tubercular lymphadenopathies were 83.0%, 100.0%, 100.0%, 88.1% and 92.54% respectively (Table.3). Similarly, sensitivity, specificity, positive predictive value, negative predictive value and diagnostic accuracy for granulomatous lymphadenopathies were 90.0%, 98.0%, 90.0%, 98.0% and 97.01% respectively (Table.4).

Table: 2. Age distribution in patients with cervical lymphadenopathy.

<table>
<thead>
<tr>
<th>Age group</th>
<th>Sex</th>
<th>Total</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-24</td>
<td>Female</td>
<td>8</td>
<td>4</td>
</tr>
<tr>
<td>25-34</td>
<td>Male</td>
<td>12</td>
<td>7</td>
</tr>
<tr>
<td>35-44</td>
<td>2</td>
<td>11</td>
<td>13</td>
</tr>
<tr>
<td>45-54</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>55-64</td>
<td>4</td>
<td>8</td>
<td>12</td>
</tr>
<tr>
<td>64 above</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>30</td>
<td>37</td>
<td>67</td>
</tr>
</tbody>
</table>

In this study 9 (13.43%) cases, cytological diagnosis was not correlating with histopathological diagnosis but FNAC and histopathology correlated in 86.57% cases (Table.5).

DISCUSSION

In our Department, cervical lymphadenopathies are most common presentation in head and neck unit. Several studies on lymphadenopathy have shown that cervical lymph nodes are the most frequently enlarged and biopsied of all peripheral lymph nodes.4,5 Tuberculosis is the commonest cause of lymphadenopathy in developing countries and should be considered in every case of granulomatous lymphadenopathy unless proved otherwise.

Results show that FNAC can be used as sole diagnostic modality in cervical lymphadenopathy because majority of FNAC result was same as histology. Similar observation was observed by
Evaluation of fine needle aspiration cytology

CONCLUSION

FNAC is very simple and accurate technique for diagnosis of cervical lymphadenopathy. Can distinguish tubercular lymphadenitis from reactive and granulomatous lymphadenitis in majority of cases. So, it can be used as an initial and diagnostic investigation for routine screening of cervical lymphadenopathies.

REFERENCES

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