Study of Cytology and Histopathology of Secondary Deposits in Lymph Node

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Abstract

Aim: To assess the reliable of cytological diagnosis of second deposits of Lymph node in compare with histopathology.

Material And Methods: In a 3 year period 54 cases of secondary deposits of lymph nodes in cytology were reported and 41 cases were correlated with histopathology.

Conclusion: Cytological study is most reliable ancillary study in case of secondary deposits in lymphnodes.

I. Introduction

The involvement of lymph nodes by metastatic tumors signifies a new phase in the progress of a cancer. It indicates that through a succession of molecular changes, the cancer cells have acquired phenotypes that enable them to invade, colonize, and disseminate. Establishing the presence of metastatic tumor in lymph nodes is essential for themanagement and prognosis of cancer. In human solid cancer, lymph node status is the most important indicator of clinical outcome. [16]. Sometimes, a lymph node metastasis is discovered before an occult primary tumor is detected. FNA is a reliable method of diagnosing metastatic cancer. Cytology is a reliable study helps in identifying some of the primary and most of the metastatic deposits reliably. Cytological smears are also helpful in performing other diagnostic techniques like IHC in cases of unknown primary.

II. Aims And Objectives

Comparative study of cytology and histopathology of secondary deposits in lymph node. To assess the reliability of cytological diagnosis of secondary deposits of lymph node. To study incidence of various secondary deposits. To know the proportion of different types of secondary deposits in lymph node.

III. Materials And Methods

Period of study: from July 2013-July 2016. Total number of cases: 54 cases, 41 cases are correlated. Fixatives used: Methanol fixative for cytological study, 10% formalin for biopsies. Stain used: routine H&E stain.

IV. Observations

Lymph node groups involved and type of secondary deposits in relation to sex based on cytological study of 54 cases.
Table 1 Lymph node groups involved and type of secondary deposits in relation to sex based on Histopathological study in 41 cases

<table>
<thead>
<tr>
<th>Site of Deposits</th>
<th>Type of Deposits</th>
<th>Sex Total No. of</th>
<th>Total No. of Male</th>
<th>Total No. of Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cervical</td>
<td>Squamous</td>
<td>10</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>Thyroid</td>
<td>0</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

Table 2 Cytology and histopathological correlation of 41 cases

<table>
<thead>
<tr>
<th>Type of Deposits</th>
<th>Total No. of</th>
<th>Total No. Of cases</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Squamous cell</td>
<td>82</td>
<td>25</td>
<td>7</td>
</tr>
<tr>
<td>Adeno Duct cell</td>
<td>17</td>
<td>12</td>
<td></td>
</tr>
<tr>
<td>Adeno</td>
<td></td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Carcinoma of Intestine</td>
<td>5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Epithelial</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposits of Papillary</td>
<td>3</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Carcinoma of Thyroid</td>
<td>1</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Mucous</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Epidermoid</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carcinoma of Salivary Gland</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

V. Discussion

Cytological study of secondary deposits in lymph node is very reliable. Cytological study of the lesions which were positive for metastatic deposits are confirmed by histopathology. Out of 54 cases studied in cytology as secondary deposits 41 cases were correlated with histopathology. 13 cases could not be correlated with histopathology as some were dropouts. Based on FNA study cervical group of lymph nodes (38 cases) are more commonly involved followed by axillary (15 cases) and inguinal (2 cases). In cervical lymph nodes majority are deposits of squamous cell carcinoma (32 cases) followed by other epithelial deposits (4 cases - thyroid, salivary), and adenocarcinoma deposits (2 cases). Squamous cell carcinoma deposits (32 cases) in cervical lymph nodes majority were males (24 cases) followed by females (8 cases). On FNA in axillary group of lymph nodes...
adenocarcinoma secondary deposits are observed (14 cases) in females only. On FNA in Inguinal lymph nodes adenocarcinoma (1 case), and melanoma (1 case) secondary deposits are seen. Out of 54 cases of cytology 41 cases are correlated with histopathology. In cervical region out 38 cases in cytology 30 cases are correlated with histopathology. In axillary region out of 14 cases 12 cases are correlated with histopathology. In inguinal region 2 cases could be correlated.

**Fig 1.** Squamous cell carcinoma metastatic deposits cytology 10x

![Image](image1.png)

**Fig 2.** Squamous cell carcinoma secondary deposits histopathology 40x

![Image](image2.png)

**Fig 3.** Adenocarcinoma metastatic deposits cytology 40x

![Image](image3.png)
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**Fig 4** Duct cell Adenocarcinoma Breast secondary deposits histopathology 40x

**Fig 5** Adeno carcinoma of colon cytology 10x

**Fig 6** Papillary carcinoma of thyroid seconadry depoistis in lymphnode histopathology 4x
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**Fig 7** Cytology of lymph node aspirate in mucoepidermoid carcinoma of salivary gland 40x

![Cytology of lymph node aspirate in mucoepidermoid carcinoma of salivary gland 40x](image)

**Fig 8** Gross picture of lymphnode in mucoepidermoid carcinoma of salivary gland

![Gross picture of lymphnode in mucoepidermoid carcinoma of salivary gland](image)

**Fig 9** Histopathology of lymphnode10x

![Histopathology of lymphnode10x](image)
VI. Summary

Cytological study is most reliable ancillary study in case of secondary deposits. Cervical lymph nodes are most commonly involved followed by axillary and inguinal lymph nodes. The incidence of secondary deposits are slightly more common in females compared to males. The incidence of Squamous cell carcinoma...
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deposits is seen in males in majority of the cases in cervical lymph nodes. The incidence of Duct cell adeno carcinoma of breast is seen in females in majority of the cases in axillary lymphnodes.

References
