ORIGINAL ARTICLE

CYTODIAGNOSIS OF METASTATIC CERVICAL LYMPHADENOPATHY IN A TERTIARY CARE CENTRE IN NORTH-EAST INDIA - A ONE YEAR STUDY

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ABSTRACT

Background: Malignancies in lymph nodes in our country are predominantly metastatic in nature with an incidence varying from 65.7% to 80.4%-and lymphomas range from 2% to 15.3% among lymph nodes aspirated from all sites. Cervical lymphadenopathy accounts for majority of metastatic malignancy.In the present study, 77 cases with cervical lymphadenopathy were included over a period of 1 year ; out of 105 cases of overall lymphadenopathy (73.3 %) & 76.6% of cases turned out to be metastatic in nature .

Objectives: **1.** To find age & sex incidence of metastatic cervical lymphdenoapathy at TMC & BRAM Teaching Hospital. **2.** To study the cytomorphological pattern of malignancy.

Material & Methods: All the patients referred to Department of Pathology, Tripura Medical College and Dr. BRAM Teaching Hospital for FNAC of cervical lymph nodes were included in present study. The study design was retrospective and study duration was from June 2014 to May 2015 (1 year)

Results: Our study included 77 cases, corresponding to73 % of total number of cases of lymphadenopathy at our hospital. Males were commonly affected (M: F is 2.28:1). Fifth decade was the common age group involved. Metastatic lesions were reported in 23 (29.8%) of total number of cases. Out of 23 cases, 14 were metastatic squamous cell carcinoma (61%), 7 were metastatic adenocarcinoma (30.4%) and 2 were others (8.6%) which include one small cell carcinoma and one undifferentiated carcinoma.

Conclusion: Cervical lymph nodes were the commonest sites involved by metastatic malignancy with male preponderance. Peak age of incidence was noted in 5th decade. Squamous cell carcinoma was the most common malignancy reported followed by adenocarcinoma.

Keywords: Lymphadenopathy, Metastatic, Cytomorphological Pattern

INTRODUCTION

Needle aspiration of lymph nodes is one of the oldest applications of the technique in diagnosis of human diseases. The procedure dates back to 1904, when two British military surgeons published a paper describing diagnosis of sleeping sickness.[1] In 1930, Martin and Ellis of Memorial Hospital for Cancer included tumours that had metastasized to lymph node among targets of aspiration biopsy.[1]

With growing awareness in the general population regarding cervical neck swellings, it has been observed that middle aged male patient's were the commonest presentation in the out patient department of ENT and general Surgery at our hospital. In the present study, it has been observed; most patients with cervical neck swelling were reported as metastatic lymphadenopathy amongst all malignant neck swellings. Lymph nodes are the most common site of metastatic malignancy; sometimes constitute the first clinical manifestation of the disease. Cervical lymph node malignancies are predominantly metastatic in nature (65.7% to 80%).[2] Fine Needle Aspiration Cytology (FNAC) is excellent first line method for investigating the nature of lesion, as it is economical and convenient alternative to open biopsy.[3] Enlarged lymph nodes were one of the first organs to be

biopsied by fine needle aspiration; today they are frequently sampled tissues.[2]

Fine needle aspiration (FNAC) is a simple and rapid diagnostic technique. Due to early availability of results, minimal trauma and complications, fine needle aspiration cytology is now considered a valuable diagnostic aid.[3] The cytomorphological features obtained in fine needle aspiration cytology correlate very well with histologic appearances of same lesion and in some situations has qualities of micro biopsy.[3] Fine needle aspiration cytology was initially concieved as a means to confirm a clinical suspicion of local recurrence or metastasis of know cancer without subjecting patient to further surgical intervention.[3]

The clinical value of FNAC is not limited to neoplastic conditions. It is also valuable in diagnosis of inflammatory, infectious and degenerative conditions, in which sample can be used for microbiological and immunohistochemical analysis in addition to cytological preparations.[4]

The present retrospective study was undertaken to evaluate FNAC in different cytomorphological patterns of metastatic cervical lymphadenopathy in Tripura Medical College &Dr.BRAM Teaching Hospital, Hapania from June 2014 to May 2015 (1 year)

AIM & OBJECTIVE

The objectives of this study were to find age & sex incidence of metastatic cervical lymphdenoapathy at TMC & BRAM Teaching Hospital and also to study the cytomorphological pattern of malignancy

MATERIALS AND METHOD

All patients with metastatic cervical lymphadenopathy reported from Dept. Of Pathology, T.M.C & BRAM Teaching Hospital was analysed. Study design was retrospective. Study duration was from June 2014 to May 2015 (1 year).The study was approved by ethical commity of the institute. Informed consent of all the authors have been taken. Under aseptic precaution node was held between left index finger and thumb followed by insertion of 22-23 gauge needle fitted with 10 ml syringe for aspiration. The needle with syringe was introduced in node, plunger of syringe pulled to create negative pressure. With the negative pressure maintained needle was moved to and fro within node to aspirate material. The negative pressure was released and needle with syringe was withdrawn from node. Pressure with cotton swab was applied to node after withdrawal of needle. Needle was detached from syringe, air drawn into syringe, needle reattached and material pushed on slides. Multiple smears were made; few of them air dried for Romanowsky stain like May-Grunwald Giemsa stain and few were fixed with ethyl alcohol for staining with Hematoxylin & Eosin stain and Periodic- Acid Schiff stain. Special stain such as Ziehl-Neelsen's stain was used wherever indicated.

RESULTS

In the present study, maximum number of cases were observed in the 5th decade (10) followed by 6th decade (07) and 4th decade (03), showed in Table 1.

Table 1: Distribution of cases in various Age groups

Age groups (years)	No (%)
41 – 50	4 (17.39)
51 – 60	10 (43.47)
61 – 70	8 (34.78)
71 - 80	2 (8.69)
81 - 90	1 (4.34)

Table 2: Sex wise distribution of cases

Sex	No. (%)
Male	15 (65.21)
Female	8 (34.78)

Table no.2 showed the sex distribution of metastatic cervical lymphadenopathy. In our study, male patients outnumbered the female patients. 15 cases were male whereas only 8 female patients were observed.

Table 3: Distribution of number of nodes involved

No. of nodes	No. (%)
Single	17 (73.91)
Multiple unilateral	5 (21.73)
Multiple bilateral	1 (4.30)

Table 4: Distribution of site of nodes involve

Lymph Nodes	No (%)
Anterior cervical	4 (17.39)
Lateral cervical	5 (21.73)
Submandibular	11 (47.82)
Submental	2 (8.6)
Posterior cervical	1 (4.3)

Distribution of number of node involved has been described in Table no.3 which showed highest number of cases being reported as solitary nodule (73.91%). Site of involved lymphnode has been showed in Table no.4. It has been observed that the commonest node involved was the submandibular node (47.82%).

Table no.5 showed cytomorphological distribution of metastatic cervical lymphadenopathy.

Table 5: Distribution of Metastatic lesion

FNAC diagnosis	No. (%)
Squamous cell carcinoma	14 (60.86)
Adenocarcinoma	07 (30.43)
Small cell carcinoma	1 (4.3)
Undifferentiated carcinoma	1 (4.3)

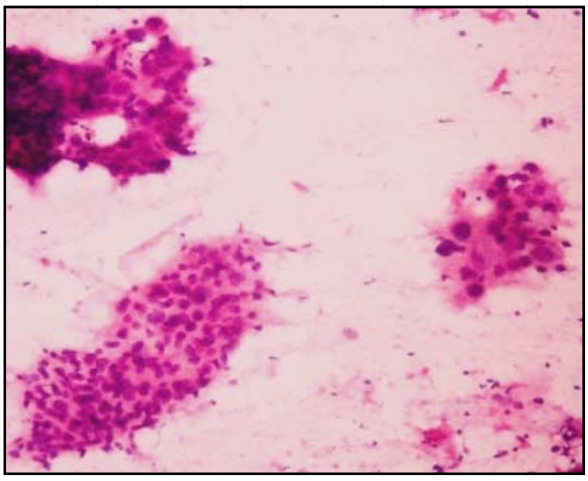

Fig 1a: Microphotograph showing metastatic deposits of Squamous cell carcinoma; x10

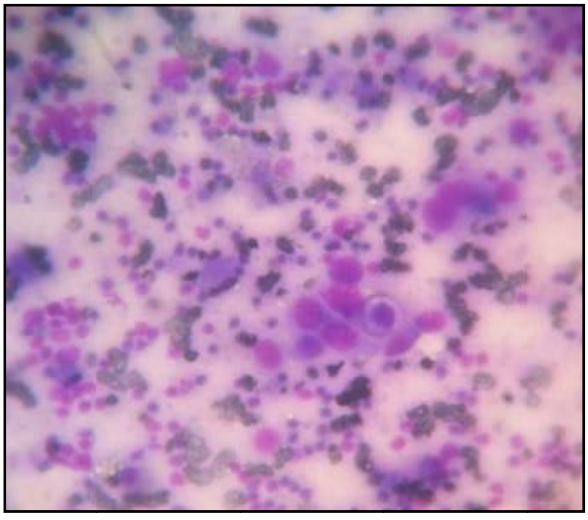

Fig:1b Metastatic Squamous cell Carcinoma (Poorly Differentiated) MGG;40x

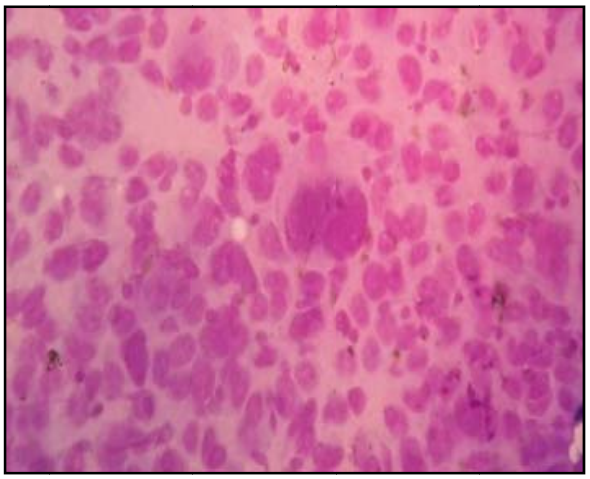

Fig:2 Metastatic Undifferentiated carcinoma; Leishman Giemsa ;40x

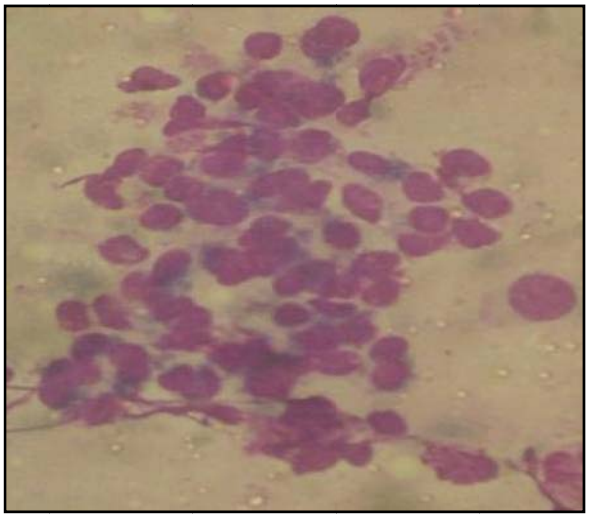

Fig 3: Metastatic small cell carcinoma; MGG:40x

The commonest cytomorphological pattern was metastatic squamous cell carcinoma (Fig.1) followed by metastatic adenocarcinoma. Few cases of undifferentiated (Fig 2) and small cell carcinoma (Fig 3) were also reported. Amongst total 23 cases of metastatic lymphadenopathy, 14 were metastatic squamous cell carcinoma (60.86%) and 7 were metastatic adenocarcinoma (30.4%). Single case of small cell carcinoma (4.3%) and undifferentiated carcinoma (4.3%) has been reported.

DISCUSSION

Enlarged lymph nodes were one of the first organs to be biopsied by fine needle aspiration; today they are frequently sampled tissues.[3] In our study, a total 77 cases of cervical lymphadenopathy have been evaluated. 23 cases were of metastatic cervical

lymphadenopathy i.e 29.8%, where as Wilkinson A.R et al observed in their study an incidence of 13.88% of metastatic lymphadenopathy.[5] The variation may be either due to small sample size of our study as well the overall incidence of oropharyangeal malignancy is high in the north eastern India. Moreover the study has been conducted in a tertiary care centre. Mohanty R et al [6] reported 6th decade as the peak age incidence.

In the present study the peak age of incidence is seen in 5th decade which correlates with the study by Kamat GC.[7] Metastatic Squamous cell carcinoma was predominantly seen in 5th decade of life, where as metastatic adenocarcinoma does not show any specific age dominance. In the present study 7 cases were reported as metastatic Adenocarcinoma corresponding to 30.4% which correlates with a study done by H.H.Nesreen et al which reported 25.8%. Male preponderance is noted in the present study. Similar observations are seen in the studies done by Khajuria R et al [8], Qadri SK et al [9], Mohanty R et al.[10]

CONCLUSION

Present study cytologically highlights spectrum of metastatic lesions causing cervical lymphadenopathy over a period of 1 year at the Dept of Pathology, TMC and Dr BRAM Teaching Hospital. A total number of 77 cases of cervical lymphadenopathy were encountered among which 23 were metastatic in origin(29.8%) . Metastatic Squamous cell carcinoma is the commonest (61%), followed by metastatic adenocarcinoma (30.4%). Metastatic lesions dominated elderly age group (5th decade) invariably affecting males.

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