ORIGINAL RESEARCH PAPER

Pathology

SPECTRUM OF METASTATIC LYMPH NODE DEPOSITS ON FNAC – A TWO YEARS RETROSPECTIVE STUDY IN A TERTIARY CARE CENTRE

KEY WORDS: Fine needle aspiration cytology, Carcinoma, Metastasis, Germ cell tumor.

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ABSTRACT

Nodal metastasis is an important mechanism of tumor dissemination in addition to hematogenous and direct local regional spread. FNAC not only confirm the presence of metastatic disease but also gives the clue regarding the nature and origin of primary malignancy. It is also useful for detection of recurrence and new metastasis. **Material And Method-** A retrospective study was done of all metastatic lymph node lesion reported on FNAC in department of Pathology RIMS Ranchi from January 2020 to December 2021.

Aims and Objectives-

1.To study cytological spectrum of various metastatic deposits in lymph nodes.

2.To access age,gender and its site commonly involved in lymph node metastatic deposits.

Result- Total 165 cases were included in the study in which 90 were males and 75 female .Most common metastatic deposit was carcinoma breast seen in 29.69% of cases followed by carcinoma of unknown primary origin which was found in 22.42% of cases. Most common involved lymph nodes were axillary lymph nodes seen in 30% of cases. Age group of patients ranges from 2years to 80years . **Conclusion-** FNAC is an easy, rapid, relatively safe and non-expensive diagnostic modality .It is useful for the early diagnosis of metastatic lymphadenopathy in developing country.

INTRODUCTION-

FNAC is a cost effective ,easily performed and reliable diagnostic modality for all the palpable swelling including lymph node enlargement.[1]FNAC not only confirm the presence of metastatic disease but also gives clue regarding the nature and origin of primary malignancy. It is useful for the detection of recurrence and new metastasis[2].

FNAC is a reliable diagnostic tool for lymphadenopathy in adult patient who are suspected for malignancy as it has less complication, is a simple invasive procedure and can be repeated easily. More than 90% of metastasis are diagnosed by initial aspiration.[3]

MATERIAL AND METHOD-

A retrospective study was done of all metastatic lymph node lesion reported on FNAC in department of Pathology RIMS, Ranchi from January 2020 to December 2021.For retrospective data ,pertaining to age, gender, site and clinical history, all were obtained from the FNAC data recording register at Cytology unit of department of Pathology, RIMS, Ranchi.

After explaining the procedure to the patient under aseptic precaution FNAC was performed using22-23 G needle and 10 ml disposable syringe. Aspirate was smeared on the slides and dried smear was stained with Leishman stain, whereas 95% alcohol fixed smear was stained with Hematoxyline and Eosin stain. Slides were collected and reviewed .In case of deep seated lesion USG guided FNAC was performed.

RESULT-

In present study total 165 case of metastatic lymph node aspirations were included. The most common metastatic deposit was breast carcinoma(29.69%) followed by metastatic deposits of unknown primary origin (22.42%), others conditions were Ca lung (6%), adenocarcinoma (5.45%),Non Hodgkin's Lymphoma (5.45%),Gastric carcinoma and GIST(4.8%),Ca liver and gall bladder(4.8%), Thyroid carcinoma(3.65%),Oral cancer(3%),Hodgkin's Lymphoma(3%),Ca cervix(2.42%), testicular tumour(1.81%), Ca rectum(1.21%),Ca penis (1.21%)and Ca Pancrease (0.60%).(table-1)

Table 1: Distribution pattern of various Lymphnode metastatic deposits

Sl No.	Tumor Origin	Number	Percentage
1.	Carcinoma Breast	49	29.69
2.	Ca of unknown origin	37	22.42
3.	Lung	10	6
4.	Adenocarcinoma	9	5.45
5.	Non Hodgkin's Lymphona	9	5.45
6.	Gastric Ca+ GIST	8	4.8
7.	Liver + Gall Bladder	8	4.8
8.	Thyriod	6	3.65
9.	Hodgkin's Lymphona	5	3
10.	Oral Cancer	5	3
11.	Ca Cervix	4	2.42
12.	Squamous Cell Ca	3	1.81
13.	Testicular tumour	3	1.81
14.	Renal Ca	2	1.21
15.	Penile Ca	2	1.21
16.	Rectum	2	1.21
17.	Malignant Melanoma	2	1.21
18.	Pancrease	1	0.60

Range of age at presentation was 2 years to 80 years with commonest age group 31 to 40 years which was 32%.Among 165 cases male predominance was found with 90 cases whereas 75 cases were female.The most common lymph node site involved(Fig 1) was axillary lymph nodes(30%) followed by cervical lymph nodes (29%),Supraclavicular (20%),Inguinal lymph nodes (16%),posterior auricular (4%)and abdominal lymph nodes.

DISCUSSION-

In our study most common malignant deposit was carcinoma breast and most common lymph node involved was axillary lymph node. One case was carcinoma of male breast in our study. Age group most commonly involved between 30 to 40 years but 3 cases of younger age group between 20 to 30 years

was also found.

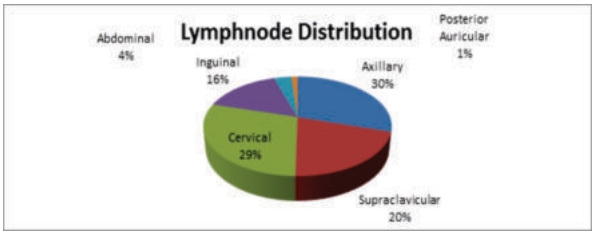

Figure-1: Site of involvement in lymphnode metastatic deposits

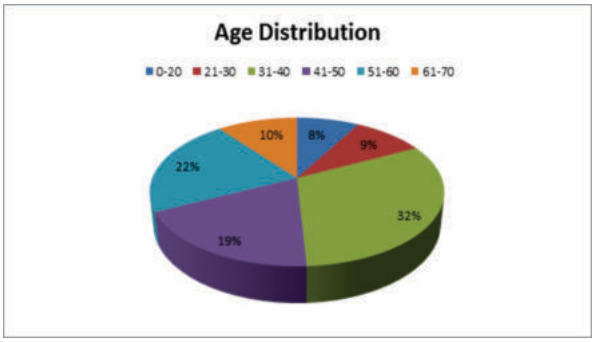

Fig. 2: Age group involved in Lymphnode metastatic deposits

Axillary lymph node status is one of the most important prognostic and diagnostic factor for disease free survival and overall survival in patient with breast cancer.[4]Pathological biopsy is the gold standard for clinical diagnosis of axillary lymph node metastasis but result cannot be obtained until postoperative.[4]Although the occurrence of neck metastasis in breast cancer is low(2.3%to4.3%).[5,6,7,8,]In case of breast cancer cervical lymph node metastasis can occur months to year after diagnosis of primary tumor.[9]Breast cancer is the most common distant primary to metastasize to neck lymph nodes.[7]

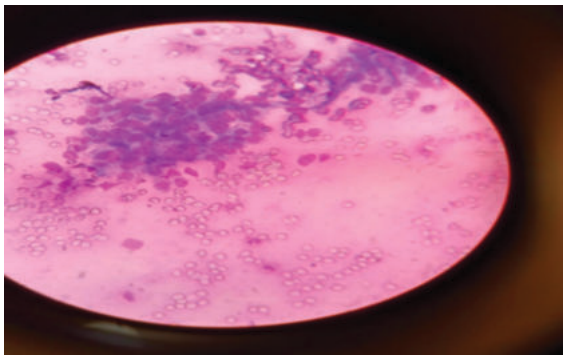

Fig. 3 a: Metastatic deposit in case of breast cancer. Leishmann stain (10 X)

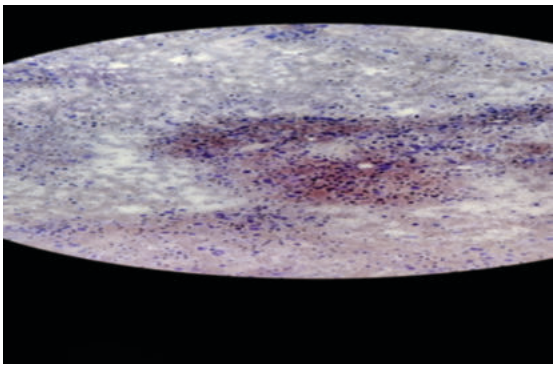

Fig. 3 b: Malignant melanoma deposits in inguinal lymphnode H& E stain (10 X)

In our study 3 cases of breast carcinoma were found with metastatic deposits in supraclavicular lymph node. One case of CML there is involvement of left axillary lymph node.

FNAC has a significant role in neck lymph node particularly those with metastasis. FNAC confirm the presence of metastatic disease and give a clue regarding its nature and origin of primary malignancy.[4]Oral cancer including carcinoma tongue, carcinoma thyroid, adenocarcinoma, Hodgkin's disease, Non Hodgkin's lymphoma cervical group of lymph nodes were involved.

In this study3 cases of breast carcinoma, 2 seminoma, 1 adenocarcinoma, metastatic deposits were found in supraclavicular lymph node. In lung cancer most common lymph node involved was supraclavicular.

Inguinal lymph nodes are common site of metastasis for malignancies located in the pelvis, lower extrimities and trunk. Tumor that frequently metastasize to inguinal lymph nodes are malignant lymphoma, squamous cell carcinoma of vulva and penis and malignant melanoma of the leg. The most common gastrointestinal tumor to metastasize to inguinal lymph node are squamous cell carcinoma of anus and lower third of rectum.[10]

In our study second most common site of metastatic lymph nodes are inguinal lymph nodes with unknown primary origin. Carcinoma rectum, penis ,lower imb, malignant melanoma, Hodgkin's lymphoma also metastasized inguinal lymph nodes. Inguinal lymph node metastasis rarely seen in cervical cancer. According to TNM classification of malignant tumor inguinal lymph nodes are considered as non regional lymphatics in cervical cancer, therefore involvement of inguinal lymph nodes are accepted as distant metastasis (M1).[11]

One case of GCT stage 3 of left testis involved the left supraclavicular lymph node metastasis, which is an uncommon presentation. The regional metastatic lymph node for testicular cancer are paraaortic lymph nodes with lymphatic drainage followed the gonadal vessels to the retroperitoneum. The presence of neck metastasis in germ cell tumor of the testis is uncommon but a well established phenomenon. Incidence of neck metastasis ranges from 2.6% to 4.5% with neck mass being the initial sign in approximately 5% cases.[12]

One uncommon metastasis of carcinoma of right lower limb was supraclavicular lymph node involvement found in a case of 35 years old male. One uncommon presentation of metastatic deposits of lung carcinoma in inguinal and axillary lymph node involvement of a 68 year old male. Hodgkin's and Non Hodgkin's lymphoma most common lymph node involved were cervical lymph node followed by inguinal lymph nodes. In adenocarcinoma supraclavicular group of lymph nodes were most commonly involved.

In hepatocellular carcinoma mediastinal, axillary, supraclavicular and cervical lymph nodes has been occasionally reported. [13,14]

CONCLUSION-

In many cases lymphadenopathy may be the first presenting sign of underlying malignancy. The main importance of FNAC is that this simple diagnostic procedure can be easily performed in any peripheral centre with minimal resources. The procedure helps in identifying the occult malignancy which was not clinically suspected in a patient.

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