

Cytomorphological Pattern of Lymph Node Swelling in Tertiary Care Unit

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ABSTRACT

Background: Tubercular lymphadenitis is one of the most common causes of lymph node enlargement in developing countries. Fine needle aspiration cytology is a simple cost-effective, Rapid and reliable technique and first line investigation for diagnosis of superficial and deep lesion.

Aim and objective: of our study was to evaluate the common cytomorphological pattern of lymph node swelling in pathology department of BMSI, Jinnah post graduate medical centre Karachi.

Materials and methods: Cross sectional study was conducted at BMSI, Jinnah Post Graduate Institute Karachi. During the period of January to December, 2021, total 350 lymph node swelling were aspirated smear and cell block prepared Aspiration done with 22 to 24 needle gauge syringe. one slide is stained with the diff quick stain and evaluated for diagnostic material inadequate materials were re-aspirated at the time of FNA, three slides were stained with heamatoxylin and eosin stain. Cell block prepared.

Results: Total 350 lymph node swelling were aspirated during study time out of which 203(58%) cases diagnosed as chronic granulomatous inflammation, 43(12.3%) cases diagnosed as necrotizing inflammation. 37(10.6%) case diagnosed as abscess and 22(6.3%) cases as reactive hyperplasia, 39(11.1%) cases as metastatic lesions.

Conclusion: Chronic granulomatous inflammation is a heavy burden of lymphadenopathy in our setup followed by necrotizing inflammation

Keywords: BMSI FNA granulomatous inflammation

INTRODUCTION

Fine needle aspiration cytology is a simple cost-effective, Rapid and reliable technique and first line investigation for diagnosis of superficial and deep lesion.¹ Patients with enlarged lymph nodes are mostly presents in surgical and medical OPD with different types of history. lymphadenopathy of cervical lymph node is more common followed by submandibular, axillary and inguinal lymph node. FNA is very helpful to differentiate between inflammatory disorder to malignant or metastatic lesions. Granulomatous inflammation is a major bulk of cytological findings followed by reactive hyperplasia and other lesions.^{2,3} Granulomatous inflammation is a major problem in developing countries. Enlarged lymph nodes are the common presentation of extra pulmonary tuberculosis. causes of granulomatous lymphadenitis is tuberculosis and fungus.⁴ smears mostly composed of aggregates of epithelioid cells with lymphoplasmacytic cells and occasionally Central necrosis⁵, the diagnosis of tuberculosis mostly required clinical examination and many Diagnostic tests. FNA plays an important role in the diagnosis of tuberculous lymphadenitis and prevents patients for unnecessary surgery.^{6,7}

MATERIAL AND METHOD

Cross sectional study was conducted at BMSI, Jinnah Post Graduate Institute Karachi. During the period of January to December, 2021, total 350 lymph node swelling were aspirated smear and cell block prepared Aspiration done with 22 to 24 needle gauge syringe. one slide is stained with the diff quick stain and evaluated for Diagnostic material inadequate materials were re-aspirated at the time of FNA, three slides were stained with heamatoxylin and eosin stain. cell block prepared.

RESULTS

Total 350 lymph node swelling were aspirated during the study period. , age group of the male patient was between 14 to 70 years and female patients was 13 to 55 years old. Out of 350 lymph node aspirated 203(58%) cases diagnosed as chronic granulomatous inflammation, 43(12.29%) cases diagnosed as necrotizing inflammation, 37(10.57%) case diagnosed as abscess, 22(6.29%) cases as reactive hyperplasia, 39(11.14%) cases as metastatic

lesions 02(1%) cases labeled as lymphoproliferative disorder and 4(1.14%) cases labeled as inadequate material.

Table 1: Clinical diagnosis with respect lymph nodes (n=350)

Clinical Diagnosis	No of cases n(%)
Chronic Granulomatous Inflammation	203(58%)
Necrotizing Inflammation	43(12.29%)
Abscess	37(10.57%)
Reactive Hyperplasia	22(6.29%)
Metastatic Lesions	39(11.14%)
Lymphoproliferative Disorder	02(1%)
In Adequate Material	4(1.14%)

DISCUSSION

Significant finding of extra pulmonary tuberculosis presented as granulomatous lymphadenitis in our routine FNA practice. The finding of current study supported by the finding of research conducted by Patel, Mahadevapp and Manjunath (2016)¹⁰. Mostly the patient presented with cervical lymphadenopathy followed by submandibular, axillary, inguinal and supraclavicular adenopathy. The findings of current study showed that the age of female patients between 13 to 55 years as compare with age of male participants was 14 to 70 years.

Female patients were mostly undernourished with poor health conditions, overcrowded living with low socio-economic conditions and poor compliance of treatment. In our society the tuberculosis is still unmentionable and the family members of patient tried to hide the condition and delaying diagnosis. female patients have a strong family history of Tuberculosis in their relatives. Before aspiration, proper history of patients taken, most of them presented with low grade fever and weight loss with matted lymph nodes of cervical chain for one month or with long history. Radiological findings were mostly matted lymph node of 1 to 2.5 CM, on examination the painless mostly fix swelling noted. Most of the cases shows mixed inflammatory infiltrate with clusters of histiocytic cells morphologically resembling epithelioid cells, Some of the cases reveals multinucleated giant cells in necrotic background fulfills the criteria for tuberculosis along with strong family history.⁸

Most of the cases shows the features of abscess and some with extensive necrotic background and nuclear dust which was

most likely due to granulomatous lymphadenitis, we labeled these cases as necrotizing inflammation and microbiological evaluation advised for definitive diagnosis of Tuberculosis.⁹

FNA is helpful to differentiate diagnosis of inflammatory lesions from malignant disease. Those Cases which reveals the picture of abscess on smear were labeled as abscess and repeat FNA advised if swelling persists after conservative treatment.¹⁰

22(6.23%) cases shows reactive Lymphocytes in various stages of maturation, admixed with mature lymphocytes and histiocytes with no evidence of atypical lymphocytes were labeled as suggestive of reactive hyperplasia and excisional biopsy advised for further confirmation of diagnosis.¹¹

39(11.1%) cases during our study shows atypical cells of epithelial origin, commonest site was cervical lymph node followed by axillary lymph node, cytological pattern of cells were suggesting metastatic lesions. radiological evaluation of patients and excisional biopsy advised for confirmation of primary site.¹²

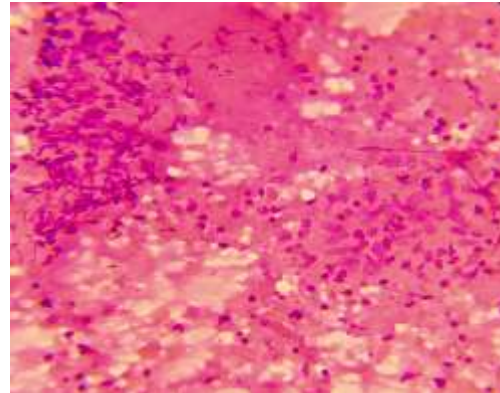
2(1%) cases shows atypical lymphocytes with crescent shaped and binucleated cells were labeled as lymphoproliferative disorders with advise of excisional biopsy and extensive panel of immunomarker for definitive type of lymphoproliferative disease.¹³

4(1.14%) cases shows diagnostic material as unsatisfactory and clinical evaluation advised.

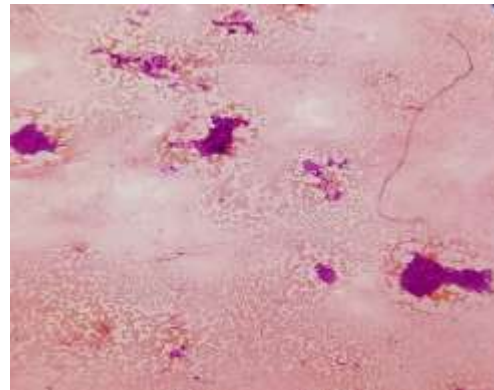
CONCLUSION

chronic granulomatous inflammation is a heavy burden of lymphadenopathy in our setup followed by necrotizing inflammation.

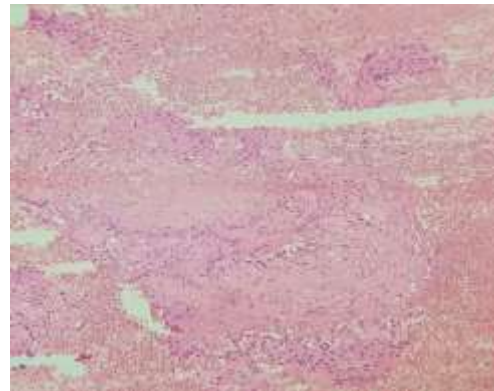
Recommendations: large-scale awareness campaign for early diagnosis and compliance of treatment required to decrease the burden of tuberculosis and confirmation of metastatic lesions .



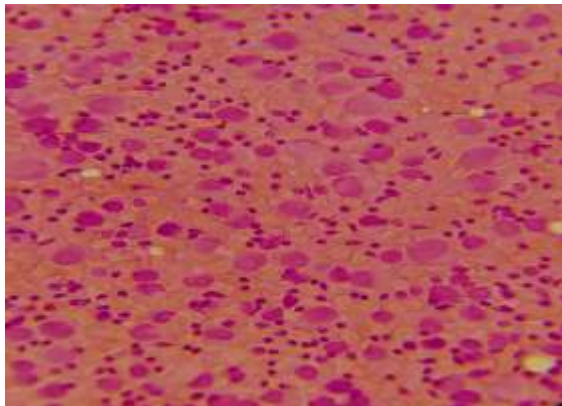
Microphotograph of chronic granulomatous inflammation.



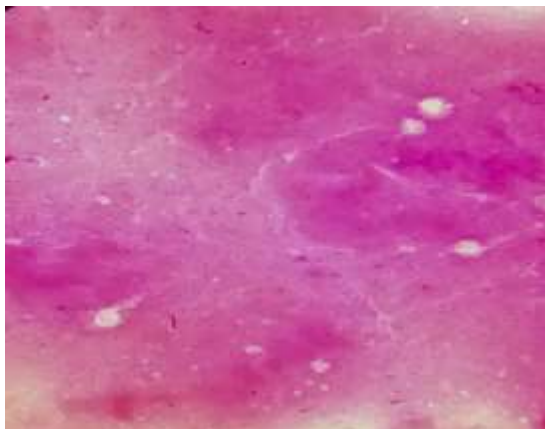
Microphotograph of cell block .case diagnosed as metastatic lesion



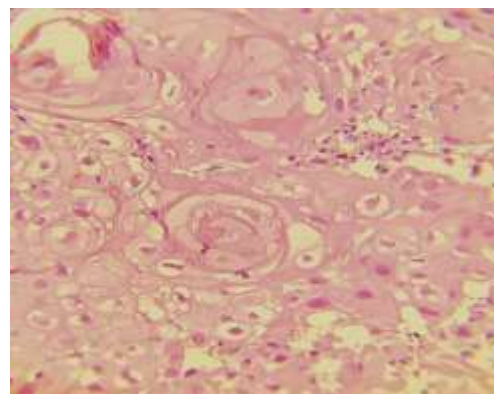
Microphotograph of cell block .case diagnosed as metastatic lesion



Microphotograph of case diagnosed as lymphoproliferative disorder. Smear shows atypical lymphocytes



Microphotograph of case diagnosed as cold abscess



Microphotograph of cell block .case diagnosed as metastatic lesion



Microphotograph of case diagnosed as abscess

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