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CYTOMORPHOLOGICAL FEATURES OF THYMOMA- A RARE DIAGNOSIS BY FINE NEEDLE ASPIRATION CYTOLOGY

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INTRODUCTION

Thymoma is a rare tumor derived from thymus epithelial cells and occurs mostly in patients between 40 and 60 years old with slight male predominance. Thymomas account for less than 1% of the human neoplasms.[1] Fine needle aspiration cytology of thymic epithelial neoplasms remains an underutilized method of sampling mediastinal masses. A cytological diagnosis of thymoma is extremely challenging because the tumor is uncommon and aspirates are infrequently encountered.

CASE REPORT

A 34 years old male reported to our institute with the complaints of shortness of breath and chest pain radiating to right arm. He was diagnosed as case of abdominal tuberculosis and was operated 3 years back and was put on ATT. Patient also had cervical lymphadenopathy and biopsy was taken and was diagnosed as granulomatous lymphadenitis. He was being treated in a Research Institute but the patient remained symptomatic. He reported to this hospital in February 2016 where he was re-evaluated.

Axial scan CECT Chest showed mediastinal mass encasing the mediastinal vessels with continuous extension in the right anterior chest wall in presternal areas involving pectoralis with collapse of upper lobe and pleural effusion (Figure 1).

FNAC was done from mediastinal mass which revealed mixed population of spindle cells, polygonal epithelial cells and lymphoid cells. The spindle cells were arranged in loose clusters with sarcomatoid appearance showing prominent nucleoli. The polygonal cells revealed squamoid appearance and were arranged in sheets intermixed with lymphoid cells (Figure 2-5). Many atypical mitotic figures were seen. Background showed large number of macrophages. Diagnosis of malignant thymoma (sarcomatoid carcinoma) was made.

Patient was put on three consecutive cycles of chemotherapy resulting in symptomatic relief and resolution of mediastinal lesion.

FIGURES

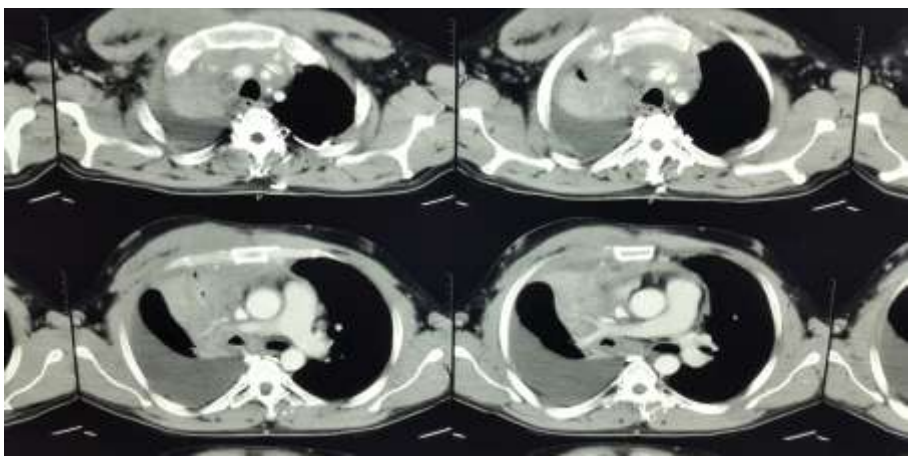

Fig.1 Axial scan CECT Chest showed mediastinal mass encasing the mediastinal vessels with continuous extension in the right anterior chest wall in presternal areas.

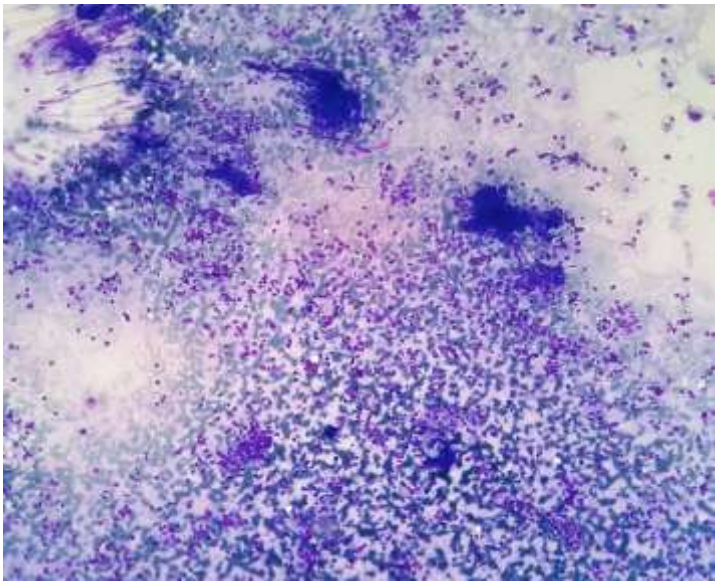

Fig. 2 Malignant Thymoma. FNAC. Moderately cellular smear showing clusters and sheets of oval to polygonal cells along with few spindle cells.(MGG,X100).

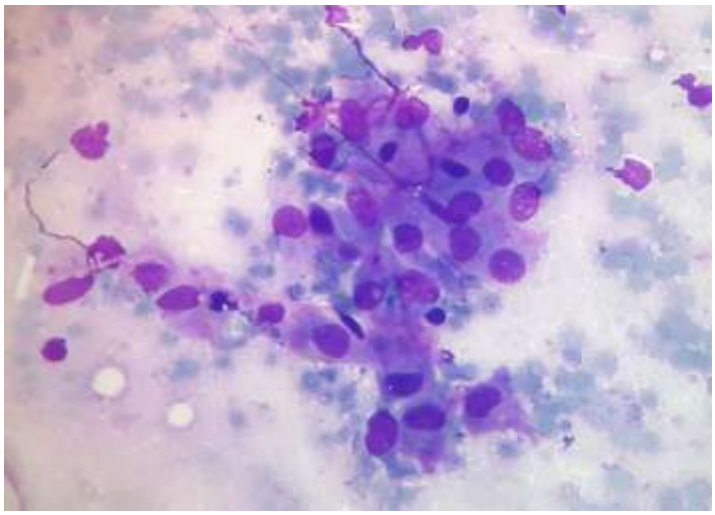

Fig. 3 Malignant Thymoma.FNAC. Multiple clusters of epithelial cells and few spindle cells showing scanty cytoplasm and nuclear pleomorphism. The background consists of lymphoid cells.(MGG,X400)

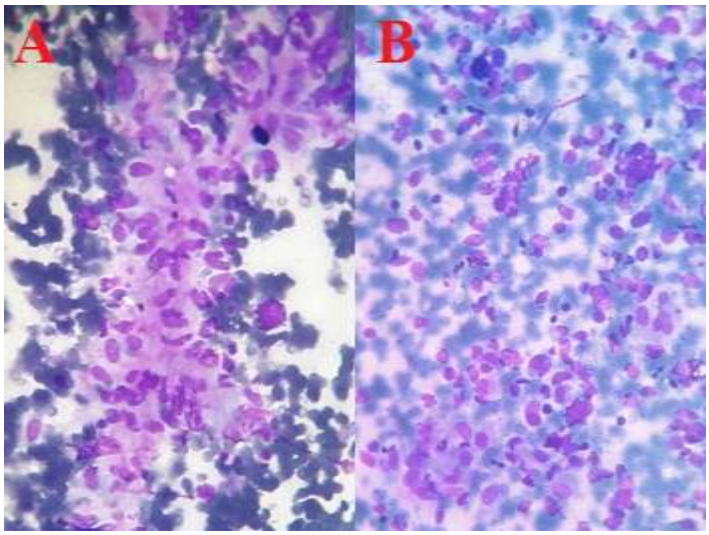

Fig. 4A Smear shows clusters and fascicles of spindle cells and pale cytoplasm,elongated,hyperchromatic nuclei with few lymphocytes in background. 4B Cells with similar morphology arranged in small groups(MGG,X400).

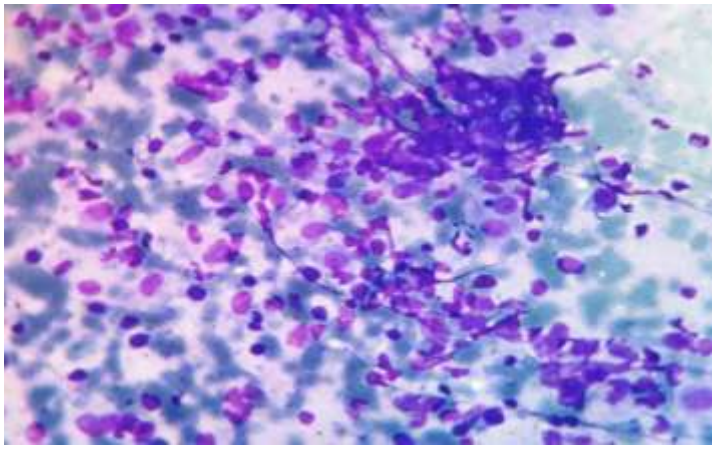

Fig. 5 Malignant Thymoma showing mixed population of oval and spindle cells in the background of lymphocytes.

DISCUSSION

Thymoma is exceedingly uncommon in children and young adults,rises in incidence in middle age, and peaks in the seventh decade of life.[2] Thymomas have a variable presentation, manifesting either concurrently with myasthenia gravis, with local symptoms like chest pain, neck mass, superior vena cava syndrome or asymptomatically as a mediastinal mass on chest radiography.[3] A specific cytological diagnosis of thymoma is among the most difficult attempted in FNA cytopathology. In a well- performed FNA biopsy, the slides from a thymoma regardless of histologic subtype are moderately cellular or even hypercellular. The large number of lymphocytes found in these aspirates is a heterogeneous group with small round lymphocytes being most common. Critical to the cytological diagnosis of thymoma is the recognition of a second distinct population of epithelial cells admixed with lymphocytes as seen in our case.[4] The epithelial cells in our case had spindle cell morphology giving a sarcomatoid appearance, some scattered singly and others intermixed with lymphocytes. The large polygonal epithelial cells with squamoid appearance were also identified.

Differential diagnosis of thymoma most commonly constitutes lymphoid neoplasms like Non Hodgkins and hodgkins lymphoma. Another important differential diagnosis is granulomatous and spindle cell lesion as seen in our case. Careful cytological interpretation along with immunohistological markers for cytokeratins leads to correct diagnosis.

CONCLUSION

Thymoma is a primary tumor of the thymus epithelial cells and one of the most common neoplasms in the anterosuperoir mediastinum. Thymic epithelial neoplasms are usually seen in the fourth and fifth decades of life. FNA of anterior mediastinal thymic lesions generally yields adequate cellular tissue with distinct cytological features comprising of epithelial cells and spindle cell component along with lymphoid cells. Spindle cell component in thymoma is considered mesenchymal transition.[5] It plays significant role in subtyping the thymoma into benign and malignant and may contribute to the optimal therapeutic manipulation. FNAC along with clinical and radiological findings renders a definitive diagnosis of thymoma.

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