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## PLEURAL IMPLANT OF THYMOMA CYTOMORPHOLOGY - A CASE REPORT

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### ABSTRACT

Though recurrence of thymoma is rare, yet pleural dissemination has been described by few authors. We present a 37 year old patient who was diagnosed as thymoma WHO classification type B3, stage III on Masoaka staging and underwent complete thymectomy. Two years later she presented with recurrent myasthenic symptoms. On evaluation a pleural nodule was identified. CT guided fine needle aspiration suggested a recurrence. As recurrence is rare and no definitive guidelines regarding therapy; cytological morphology would be of great help in recognizing recurrence. This would also serve to reduce the requirement of thoroscopic surgery and its related mortality and morbidity.

**Keywords:** Thymoma, FNAC (Fine needle aspiration cytology), WHO-World health organization, CT-Computed Tomography

### INTRODUCTION

Thymoma is a thymic epithelial neoplasm exhibiting organoid features, accompanied by variable numbers of reactive lymphoid cells.<sup>1</sup> Cytological diagnosis of thymoma is one of the difficult tasks encountered in mediastinal lesions, the reason being the rarity of the tumour and the difficulty in getting proper and adequate sampling which is highly dependant on the technical skill of interventional radiologist. Additional characteristic histopathological features that help in diagnosis of thymoma, such as organotypical differentiation, lobule formation, dilated perivascular spaces can be completely missed in aspiration slides. As there is no standard protocol for the treatment of recurrences, most of the authors in the literature proposed the treatment that would be multimodal based on evidence based

practice.<sup>2</sup> Invasive thymoma is characterized by microscopic invasion through fibrous capsule or frank invasion into pericardium, great vessels, and lung. Some thymomas show multiple implants on pleural and pericardial surfaces.<sup>3</sup> An invasive thymoma behaves as a malignant tumor despite its benign histologic appearance. A frequent pattern of dissemination of thymoma is by formation of pleural implants.<sup>4</sup>

### CLINICAL FEATURES

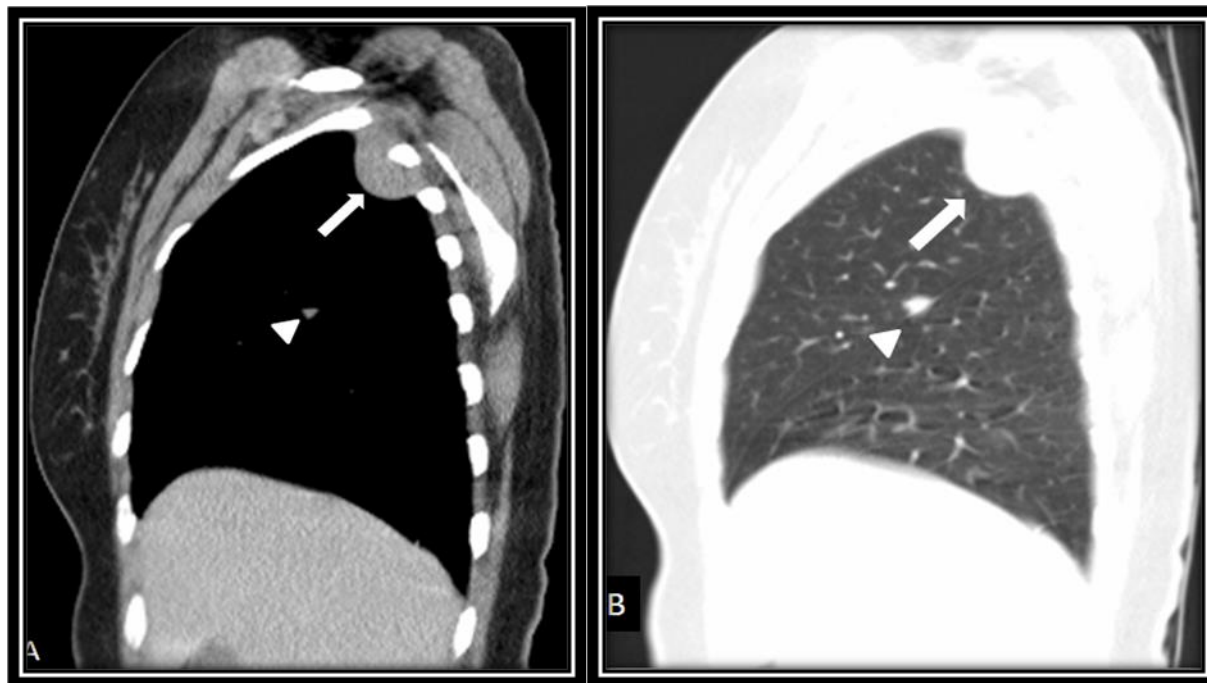
A 37 year old female patient was admitted for evaluation of a chest nodule, detected on regular follow up with CT thorax.

Past history was significant for myasthenia gravis and thymoma which was diagnosed 2 years earlier. She had undergone a resection of tumour with

histopathological diagnosis as thymoma type B3 according to WHO classification 2004.

Systemic examination was within normal limits.

Her current CT scan showed non-enhancing soft tissue density, two pleural lesions. One, measuring 3.6x1.4cms in third intercostal space and another noted along minor fissure 8x16mms (Fig A & B).

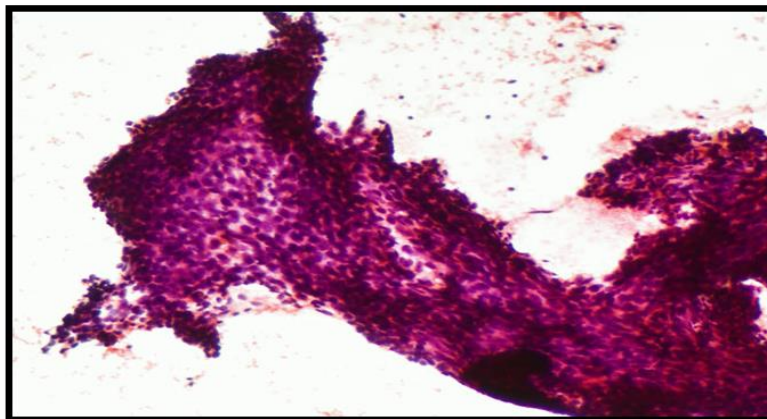


**Fig A & B: CT – Thorax showed non-enhancing two pleural soft tissue densities**

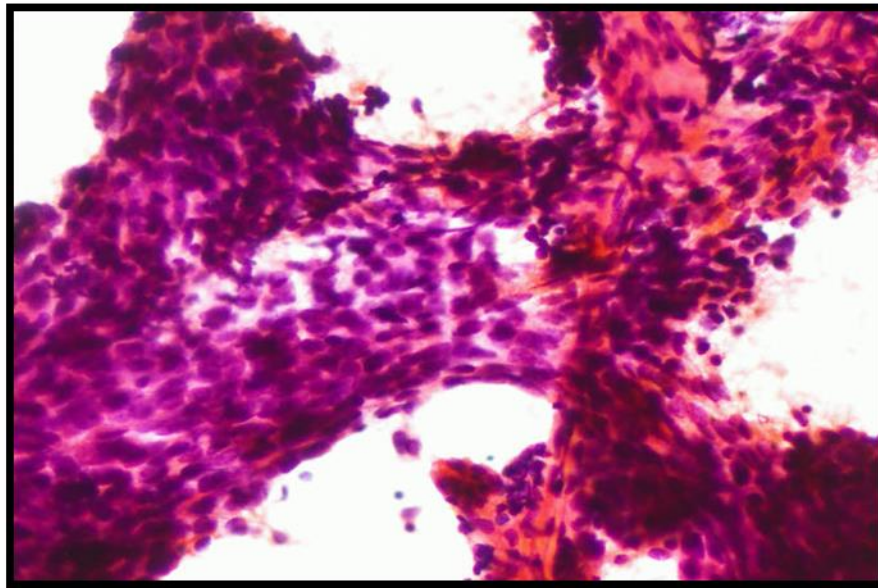
FNAC of the pleural lesions showed cellular smears composed of spindle shaped cells arranged in intersecting fascicles producing a storiform pattern with pale nuclei, dispersed chromatin and inconspicuous nucleoli (Fig 1 & 2).

**Treatment details:** Patient was treated with external beam radio-therapy with a maximum tolerance dose of 50Gy over 5 weeks. Subsequently, she was lost for follow up.

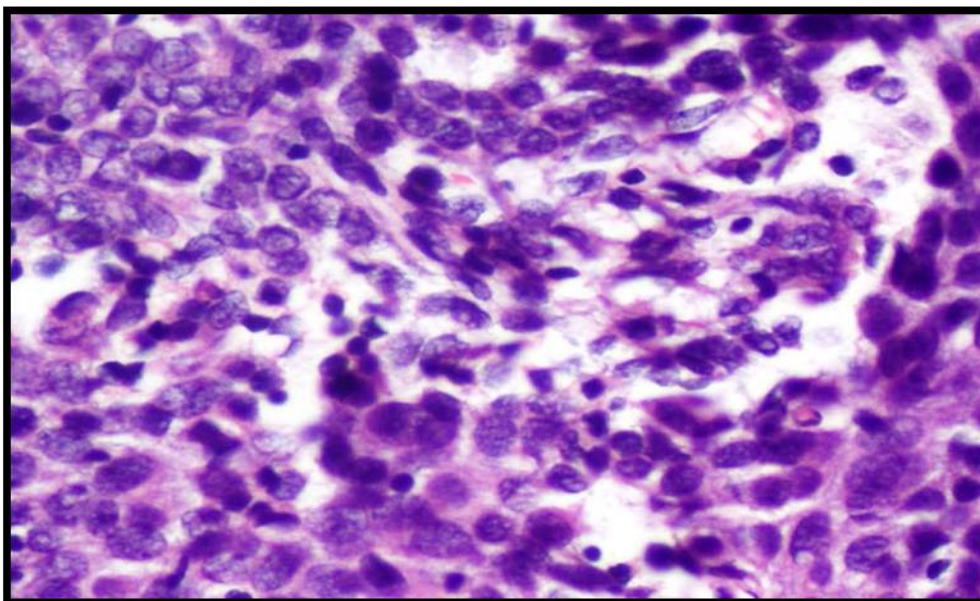
### CYTOLOGICAL FEATURES



**Fig 1: Spindle cells arranged in cohesive clusters; (100x;Papanicolaou stain)**



**Fig 2: Spindle cells are closely arranged in intersecting fascicles producing a storiform pattern.(400x; Papanicolaou stain)**



**Fig 3: Cell block shows polygonal to spindle cells with ovoid nuclei, fine chromatin and moderate cytoplasm and admixed with lymphocytes (400x; Haematoxylin&Eosin)**

#### **DISCUSSION**

The distinction between benign and invasive thymoma depends on the demonstration of local invasion or extrathymic metastasis.<sup>2</sup> Benign or invasive thymomas show perivascular space

rosette-like formation and gland-like formation seen in contrast to thymic carcinoma.<sup>3</sup>

Keen and Libshitz<sup>6</sup> and Zerhouni et al<sup>5</sup> documented 94% and 91% accuracies of invasion to great vessel and/or pericardium, lung, and pleura on thin-section CT scans.

Local invasion by thymoma can involve the chest wall, lower neck, pleura, great vessels and pericardium. They may also spread by pleural seeding.<sup>7,8</sup> The reason for the appearance of pleural implants, so called 'droplet metastases', after many years of the resection of a non-invasive thymoma is not clear.<sup>7</sup> The 5-year and 10-year survivals in the series of Verley and Hollmann were 85% and 80% for the group with non-invasive thymomas and dropped to 50% and 35% for the group with invasive thymomas.<sup>6,7</sup>

### CONCLUSION

FNA cytology is a rapid and useful technique in confirming the presence of pleural deposits in a thymoma and cell block when available can be used for IHC studies for confirmation and avoid unnecessary thoracic surgeries and its related morbidity.

### Conflicts of interest – Nil

### ACKNOWLEDGEMENT

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