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Endobronchial USG: Novel approach in diagnosing thymic carcinoma



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Introduction

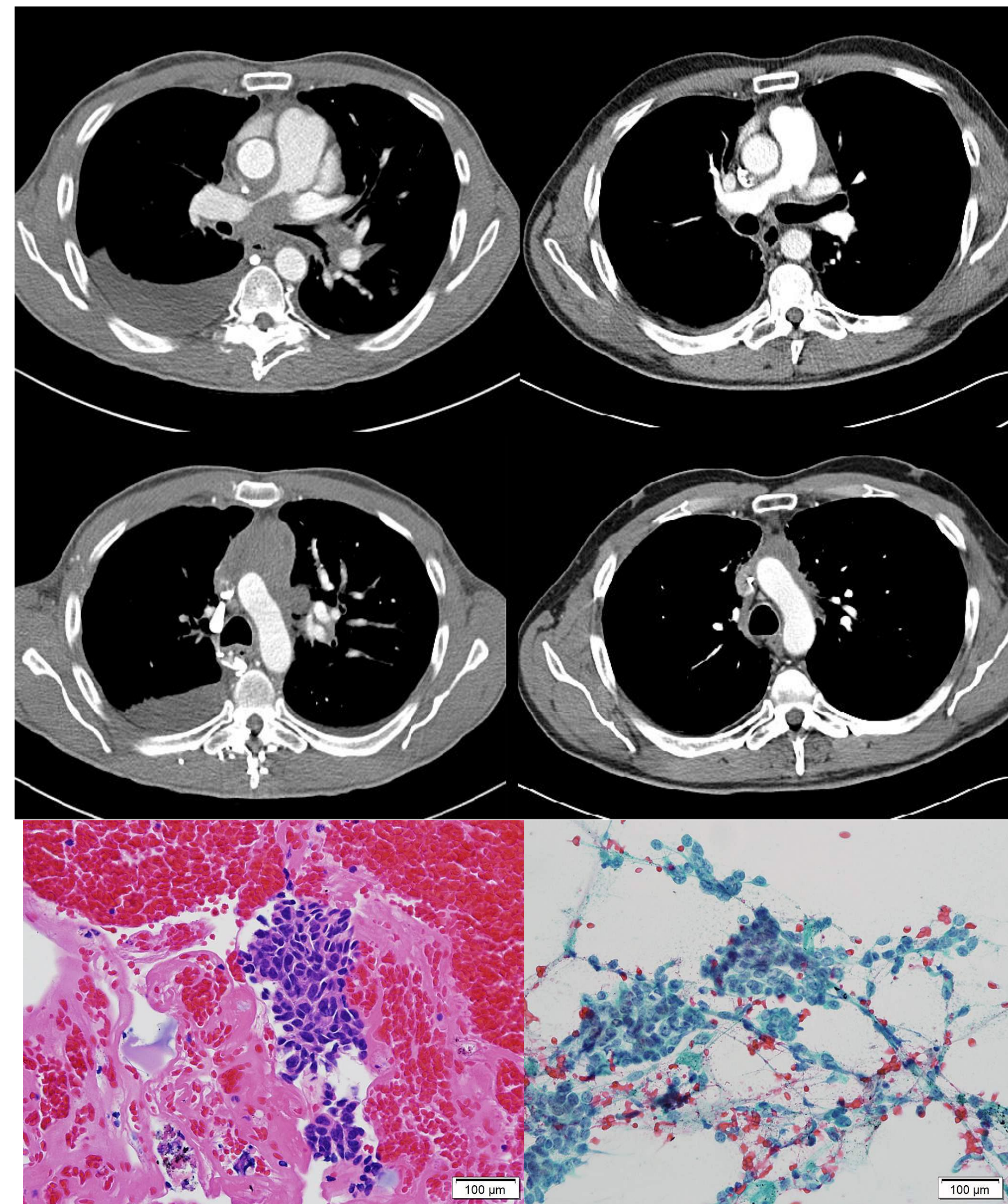
Anterior thymoma/thymic carcinoma is epithelial in origin. It is classified as anterior mediastinal tumor and diagnosis of thymic carcinoma with FNA in situation where mediastinoscopy cannot be performed is difficult to establish. FNA biopsy under USG guidance of such mass can establish histological diagnosis of thymoma with histochemical confirmation.

Case presentation

A 55-year-old male presented to the ER with a 6 month history of weight loss and dyspnea. He endorsed anorexia/fatigue (12 months), hoarseness in voice, retrosternal chest pain/pressure and dry cough for 6 months. He denies joint pain or skin rash.

Past medical history was significant for 45 pack years of smoking, cocaine and marijuana use (quit 1 year ago), currently drinking. His occupation included welding and working in a liquor store. There is remote history of travelling to Cuba and his pets include cats/chickens.

Patient was hemodynamically stable with oxygen saturation of 95% on 1 liter of oxygen while physical examination



From top Left to bottom: **Fig 1:** compressed pulmonary artery. **Fig 2:** anterior mediastinal mass. **Fig 3:** H&E stain **From Right down: Fig 4:** Pulmonary artery after treatment. **Fig 5:** tumor size shrinkage. **Fig 6:** Papanicolaou stain.

revealed decreased breath sounds over right lung base. Labs showed Cr 1.10, total bilirubin 1.5 and direct bilirubin 1.2. Hepatitis and HIV panel were negative.

High resolution computed tomography of chest showed an anterior mediastinal mass (fig. 2) which was compressing the pulmonary artery (fig 1). Thoracocentesis was unremarkable for malignant cells on cytology. Samples of the lesion were obtained utilizing endobronchial ultrasound with FNA which were subsequently stained with H & E

(fig. 3), Papanicolaou (fig.6) and CD5 stain

Discussion

Thymic carcinoma is rare with incidence of 0.06% of all thymic tumors with 5 year survival rate between 30-50%. Common approaches to diagnosis include utilizing image-guided FNA or mediastinoscopy for obtaining histological samples. Use of FNA can be limited since thymomas at time contain the thymic carcinoma which can be missed during sampling. The diagnostic yield of FNA is variable and dependent on the expertise of the team comprising of pulmonologist plus the pathologist which presents as a challenging task. Mediastinoscopy results in better sample size and diagnostic yield as compared to FNA but it is invasive and associated with greater morbidity. Histochemical stains including CD5 are used for confirming diagnosis.

Conclusion

After histological diagnosis of thymic carcinoma was made, our patient got standard chemotherapy resulting in marked improvement of symptoms and shrinkage of tumor size (fig. 4,5).

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