Thoracic incidentaloma in a chest computed tomography scan of a patient with COVID-19

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Introduction

The histopathology of mediastinal masses ranges from benign to malignant (Takeda et al, 2003). Germ cell tumours make up approximately 20% of mediastinal tumours and cysts. The thymus is the most common location of primary mediastinal germ cell tumours. The most common type of thymus-localised germ cell tumour is mature cystic teratoma (Dulmet et al, 1993). Multilocular thymic cysts are reactive and often associated with inflammation and fibrosis. Multilocular thymic cysts develop as a result of induction and cystic dilation from various causes (tumour, lesion). Therefore, the presence of accompanying neoplastic and inflammatory processes needs to be checked for in patients with multilocular thymic cysts.

Case report

A 29-year-old woman presented to the authors' clinic with fever, cough and suspected COVID-19. A polymerase chain reaction test was positive for COVID-19. As the patient had a cough, thoracic computed tomography was performed, which revealed thymus hyperplasia in the anterior mediastinum and a cystic lesion with solid structures 33 × 42 mm in size that could not be clearly separated from the thymus tissue (Figure 1). The patient received treatment for COVID-19 after the lesion was detected. She returned to the clinic for surgery at the end of the 3-week isolation, treatment and rest period, and the preoperative examinations were repeated. Blood and other tests were normal and the patient had no symptoms of COVID-19. Two polymerase chain reaction tests were performed before videothoracoscopic mediastinal mass resection, one on the day the patient was admitted to the ward and the other the day before the surgery, and the results were negative. The patient underwent mediastinal mass excision and thymectomy with 2-port videothoracoscopic surgery. Macroscopic evaluation of the lesion showed that it weighed 36 g and was 6 × 4.2 × 8 cm in size, light brown, surrounded by a capsule, irregularly shaped, and with a rough surface. Pathological examination revealed a mature cystic teratoma and thymic cyst (Figure 2). The lesion was completely resected, and R0 resection was confirmed by the pathology report.

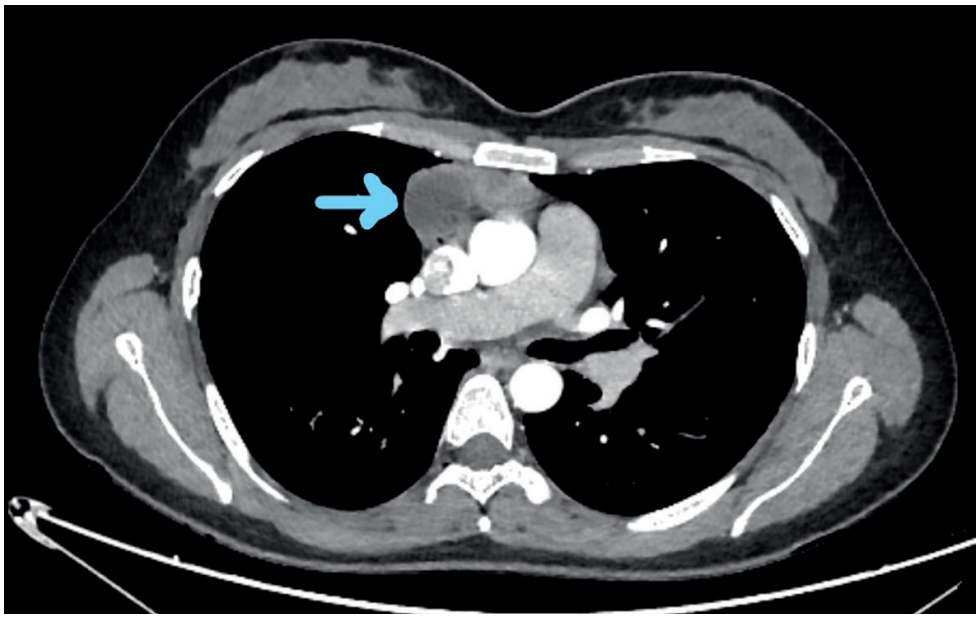

Figure 1. Preoperative computed tomography image showing a multilocular solid cystic lesion in the anterior mediastinum (arrow).

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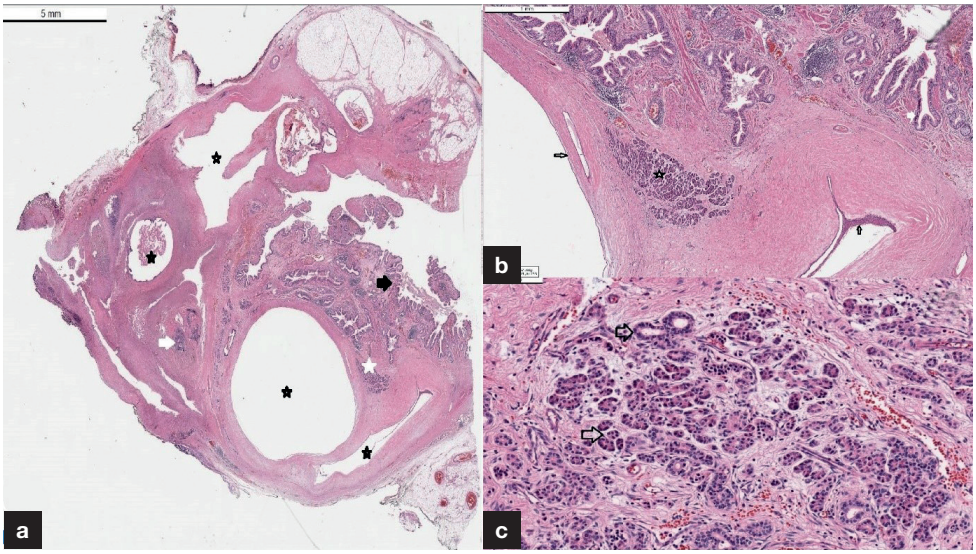

Figure 2. Pathological findings. a. Mesenchymal elements consisting of pancreatic tissue, respiratory epithelium (black arrow), involutional thymus tissue (white arrow), and smooth muscle adipose tissue in thymus tissue with multileveled thymic cyst-like changes (cystic areas indicated by asterisk) is seen. b. Multiloculated thymic cysts lined with squamous epithelium, with increased fibrous tissue on the wall and chronic inflammation (arrows) are closely related to the teratomatous component. c. Acinus structures, pancreatic ducts and endocrine cells are seen in the pancreatic tissue within the teratoma. Haematoxylin–eosin stain: a x20, b x40, c x100.

Discussion

Thymic cysts are most commonly seen in children, but may be seen in all age groups (Shakerian and Razavi, 2018). However, they rarely occur in older people. Most thymic cysts are located in the anterior mediastinum. They are usually asymptomatic and detected incidentally during radiography, computed tomography or surgery (Shakerian and Razavi, 2018). Common symptoms include shortness of breath, chest pain, cough and dysphagia. This patient was a 29-year-old woman and her lesion was in the anterior mediastinum, in accordance with the literature. The cyst was not causing any symptoms. Since the lesion was detected on tomography during the diagnosis of COVID-19, the patient had a cough and fever.

This patient had a thymic cyst associated with a mature cystic teratoma, which has not been described in the literature in adults. Although mature cystic teratomas are frequently seen extragonadally in the mediastinum, only three paediatric cases have shown their association with thymic cysts: two patients aged 11 and 12 years were reported (Rakheja and Weinberg, 2004), and another case presented a patient aged 13 years (Kim et al, 2007). The authors believe that this case is the first presentation of a thymic cyst associated with a mature cystic teratoma reported in an adult.

Conclusions

This patient had a thymic cyst associated with mature cystic teratoma, which has not been reported in the literature in adults. As a result of the COVID-19 pandemic, many patients have undergone thoracic tomography. As in this patient, it should be kept in mind that many other thoracic pathologies may be detected with tomography in patients with COVID-19.

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Learning points

- Multilocular thymic cysts and mature cystic teratomas can be seen together in the mediastinum in adults. This should not be forgotten in the differential diagnosis.
- Computed tomography is performed in many patients to detect lung involvement in the diagnosis of COVID-19. A careful look at these scans will enable the detection and treatment of other thoracic pathologies.

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