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Mutiloculated thymic cyst: unusual presentation of mediastinal mass

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Abstract

Here we present a case of 47 year male found to have large multiloculated thymic cyst during work up done for recurrent pleural effusion. Mediastinal cyst constitutes 10-15% of all radiographically detected mediastinal masses. Thymic cyst account only 5% of mediastinal masses. Thymic cyst can cause difficulty in diagnosis due to its rare presentation, invasive nature and occasional associated with thymic neoplasm. They have been detected incidentally and associated with Sjögren's syndrome, aplastic anemia myasthenia gravis and immunocompromised patients. Here we present a case of 47-year-old male initially work up done for recurrent pleural effusion turned out to be large multilocuated thymic cyst improved after excision which had no associated syndromes and immunocompromised state.

Keywords: mediastinal mass, pleural effusion, thymic cyst

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Introductions

Multilocular thymic cysts are rare and few cases are described in the mediastinum.[1] Mediastinal cyst constitutes 10-15% of all radio graphically detected mediastinal masses, and thymic cysts account for nearly 5% of all mediastinal masses.[2] Congenital cysts arise from remnants of thymic duct during the descent of thymic primordial down to the mediastinum and are thin walled with no evidence of inflammation.[2] Acquired cyst are multilocular with associated inflammatory process, may adhere to surrounding neurovascular structures.[3,4]

A multiloculated thymic cyst may cause difficulties in diagnosis because of their apparently invasive appearance, varying microscopic features and they may be associated with thymic neoplasms.[5] We report diagnostic challenge of incidentally found rare large benign multiloculated thymic cyst in a 47-year male who recovered well after surgical excision of the cyst.

Case Report

A 47-year male presented with a history of shortness of breath on exertion, orthopnea, and dry cough in the past few months for which he had received symptomatic treatment. He was a non-smoker and did not consume alcohol. He was a farmer with no significant medical history or contact with pets. His general condition was unremarkable. There was decreased air entry, dull note on percussion and decreased vocal resonance on right chest with bronchial breath sounds over the right interscapular region. Trachea was shifted to the left. His cardiovascular and abdominal examination were normal.

Hematological, biochemical, serological and tuberculosis workup were normal. Chest X-ray showed homogenous opacity occupying almost the whole of the right lung field and the middle zone of the left lung Figure 1. Ultrasound of the chest was suspicious of a large right mediastinal cyst. However high resolution computed tomography (HRCT) of the chest reported bilateral pleural effusion with a collapse of the right lung, sub-segmental atelectasis in the anterior segment of left upper lobe, small mediastinal and pericardial effusion, Figure 2. It was not clear from the imaging reports whether pathology was pleural effusion or a mediastinal cyst. Echocardiography showed enlarged right ventricle, mild to moderate tricuspid regurgitation

A right-sided video-assisted thoracoscopic surgery (VATS) was performed which revealed a large cystic lesion occupying 3/4th of right chest compressing the right lung with a part of the cyst extending between the aorta and superior vena cava and going into the left chest, Figure 3. To ensure complete excision the incision was converted to a formal right lateral thoracotomy. The cyst contained two

Figure 1. X-ray: Right sided homogenous opacity of lung field

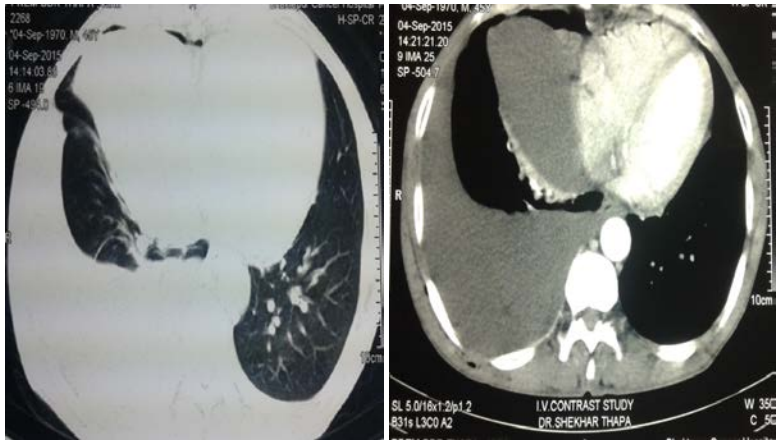

Figure 2. Preoperative CT of the chest showing collapsed lung field and right sided pleural effusion

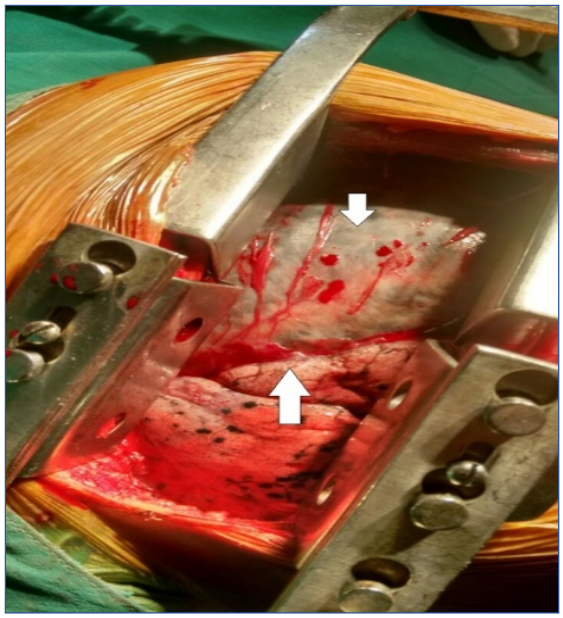

Figure 3. Intraoperative picture showing thymic cyst

Figure 4. Postoperative X-ray showing expansion of lung (compared to collapsed lung in figure 2)

litres of thick straw colored fluid, which was sent for analysis. The cyst was completely excised and sent for histology. The postoperative recovery was uneventful and discharged home after drain removal. Postoperative chest X-ray showed satisfactory re-expansion of the right lung, Figure 4. The histopathology showed a multiloculated thymic cyst. In the outpatient clinic a year after the operation, he had good exercise tolerance with no shortness of breath and no evidence of recurrence on chest X-ray.

Discussions

Our case is a 47-year-old patient with right-sided recurrent pleural effusion was found to have a multiloculated benign mediastinal cyst during workup. Ultrasound was suggestive of cystic mass, but CT scan was not able to identify the nature of lesion. True nature of the pathology was confirmed during VATS, which was converted to open thoracotomy with successful surgical excision of the cyst.

A multiloculated thymic cyst may cause difficulties in diagnosis because of invasive appearance, varying microscopic features and associated with thymic neoplasms.[5] Most cases asymptomatic and diagnosed incidentally on chest x-ray. Some may present with chest pain, discomfort and dyspnea.[5] The cyst may be associated with Sjögren's syndrome, aplastic anemia and myasthenia gravis suggesting an immune-mediated inflammatory process as the cause.[3] Unilocular congenital thymic cysts do not recur and are usually cured by a simple cystectomy.[6]

A study in 1995 reported multiloculated thymic cyst in association with Human Immunodeficiency virus (HIV) infection.[7] Thymic carcinoma has been reported in multiloculated thymic cysts.[8] Multiloculated cysts often contain turbid fluid and have thick fibrous walls.[9] Histologically multiple cystic space is lined by squamous or columnar epithelium, and remnants of thymic tissue in the cyst wall with fibrosis and inflammatory changes. Occasionally due to inflammation they may adhere to the adjacent structures and simulate an invasive neoplasm at thoracotomy.[10] On CT chest, the lesion is characteristically demonstrated as mediastinal mass containing multiple cysts along with soft-tissue attenuation.[10]

In cases like ours, when radiologic evaluation is inconclusive diagnostic mediastinoscopy, exploratory thoracotomy, video-assisted thoracoscopic surgery, transbronchial or transesophageal aspiration, and CT guided transcutaneous aspiration may be required.[10]

Regular followup is necessary as multiloculated thymic cyst may recur postoperatively.[9]

Conclusions

A multiloculated benign thymic cyst in adult male presenting as recurrent pleural effusion was confirmed during video-assisted thoracoscopic surgery, and was converted to thoracotomy for complete excision of cyst. There was no feature of recurrence at one year followup.

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