Radiology Forum

Solitary Fibrous Tumour of Pleura Masquerading as Lung Fissural Mass

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[Indian J Chest Dis Allied Sci 2016;58:121-122]

Clinical Summary

A 69-year-old male presented with symptoms of cough with mucoid expectoration associated with streaky haemoptysis and dyspnoea on exertion (MMRC grade 1) of one month duration. He was a non-smoker. There was no history of chest pain or fever. General physical and respiratory system examination revealed no significant findings.

Investigations

Blood investigations were within normal limits. Chest radiograph (postero-anterior view) (Figure 1) showed a well-circumscribed mass lesion of uniform density in the left mid zone. Contrast enhanced computerised tomography (CECT) of the thorax (Figure 2) showed a well-defined oval mass lesion (4cmx4.4cmx4cm) with smooth margins along the left major fissure showing mild homogeneous enhancement. CT-guided fine needle aspiration biopsy of lesion was performed that on histopathology (Figure 3) showed large areas of hyalinisation, ropy collagen and few sparse oval to spindle cells showing mild anisocytosis. On

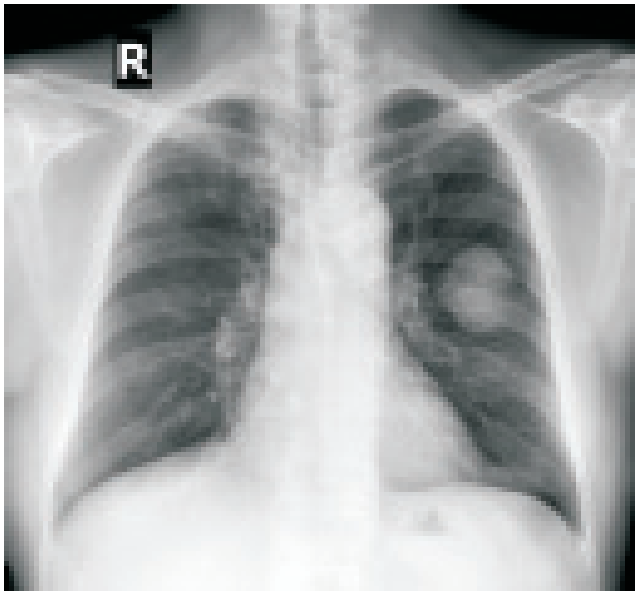

Figure 1. Chest radiograph (postero-anterior view) showing a well-circumscribed mass lesion in the left mid zone.

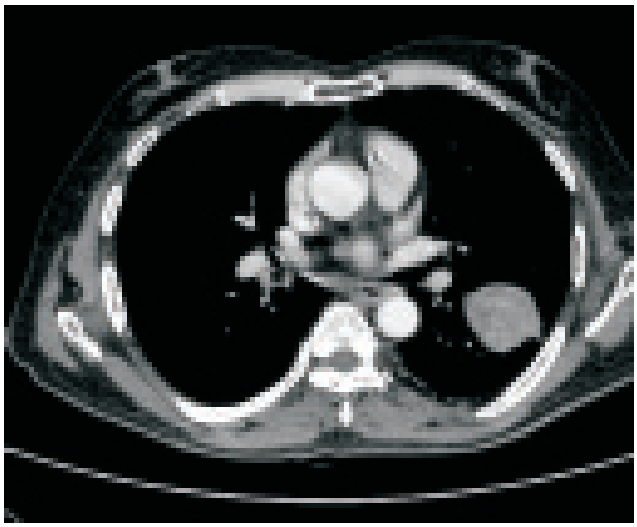

Figure 2. Contrast enhanced computerised tomography of the thorax showing a well-defined oval mass lesion (4cmx4.4cmx4cm) with smooth margins along the left major fissure with mild homogenous enhancement.

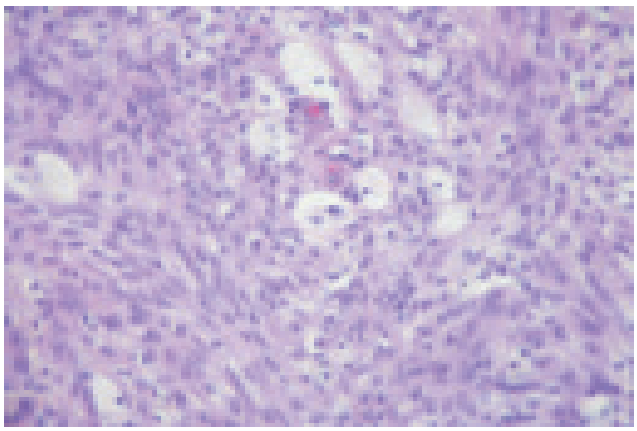

Figure 3. Immunohistochemistry photograph showing tumour composed of bland spindle cells with mild lymphohistiocytic infiltrate (Haematoxylin and Eosin, × 100)

[Received: February 10, 2014; accepted after revision: October 12, 2015]

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immunohistochemistry, the tumour cells were positive to CD-34 (Figure 4) and negative for bcl-2 and cytokeratin.

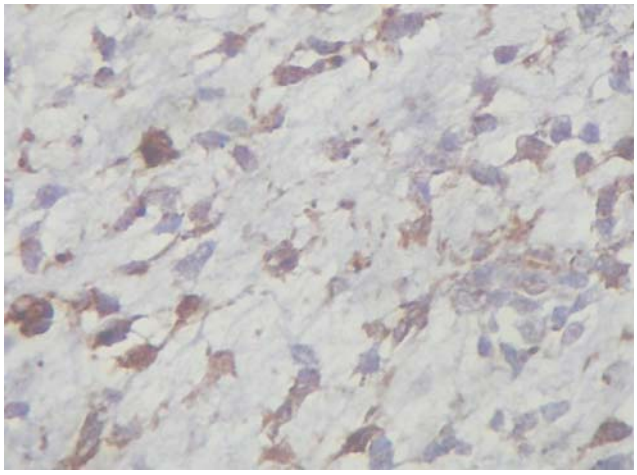

Figure 4. Immunohistochemistry microphotograph of the biopsy specimen showing positive staining to CD-34.

Diagnosis

Solitary fibrous tumour (SFT) of the pleura.

Discussion

Solitary fibrous tumour (SFT) of the pleura was initially described in 1931. The incidence is approximately 2.8 per 100,000 hospitalised patients.[1] SFT is also known as benign mesothelioma, sub-pleural fibroma and fibrosing mesothelioma. The term SFT is preferred because the tumour does not originate from mesothelial cells but from sub-mesenchymal cells of fibroblastic differentiation.[2] In addition to the pleura, SFT has also been reported in other sites, like liver, orbit, thyroid and the gastro-intestinal tract. It affects both men and women with no sex predilection. The peak incidence is in the 6th and 7th decade of life. The aetiology is unknown and cigarette smoking has no known association.[2] Approximately half of the patients are asymptomatic at presentation and the tumour is incidentally noted on chest radiography. Symptomatic patients present with complaints of cough, chest pain and dyspnoea. Larger tumours may cause compression of the bronchi and may lead to atelectasis, with symptoms such as haemoptysis. Paraneoplastic syndromes including hypertrophic osteoarthropathy and hypoglycaemia are present in 25% and 4% of patients, respectively. These occur due to production of growth hormone like substance and insulin like growth factor.[3]

The SFT is usually attached to the pleura by a short vascular pedicle. When the tumour arises from or near the fissure, it may appear as an inter-fissural mass.[4] In such cases chest radiograph shows a well-defined lung mass or a coin lesion as in our case and it is difficult to distinguish it from a bronchogenic carcinoma. Due to the presence of pedicle the tumour may appear as a 'wandering mass'. On CT, majority of the lesions are oval, spherical or lobulated and well-circumscribed. It enhances on contrast administration due to vascularity of the tumour. Vascular pedicles are usually not demonstrated on CT scans.

Histopathologically the tumour shows proliferation of spindle cells separated by hyalinised collagen. Large tumours may show changes of cyst formation, necrosis, haemorrhage, calcification. Immunohistochemistry is important in the diagnosis. SFT is positive for CD-34 and vimentin bcl-2 is also strongly expressed by tumour cells. SFT are negative for cytokeratin. Mesotheliomas are vimentin negative and cytokeratin positive. Further, most SFTs are CD99 positive and S-100 negative.[5]

Surgical resection is the treatment of choice though prognosis is good.[6] However, recurrences have been reported following excision. The tumour size is not related to the prognosis. The median survival of patients with SFT is reported to be 24 years.[7] In our case the patient refused surgery and has been advised a regular follow-up.

Our case is unusual amongst the SFTs as it presented with a short history and fissural lung mass on chest radiography. Till date approximately only 800 cases of SFTs have been reported in the literature from 1932[8] and our case adds to the valuable data with its unique presentation as a fissural mass.

References

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