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Single port VATS resection of a sessile solitary fibrous tumour of the visceral pleura. A case report

The solitary fibrous tumour of the visceral pleura is a rare neoplasm that derives from mesenchymal cells adjacent to the mesothelial tissue of pleura. Surgical resection is the treatment of choice in benign lesions and healing resulting in half of malignant. Local recurrence can occur in malignant cases, but it is very rare in solitary benign tumors. It may be a result of an incomplete or conservative surgery, lack of identification of a tumor during the operation or a growth of a synchronous neoplasm independent from that removed. Surgical resection is also burdened with some difficulty as the size of the tumor, the relationship with the adjacent structures and identification of the vascular peduncle. We report a case of 72 years-old male with a sessile left solitary fibrous tumour of the visceral pleura. The mass of 10 x 7 x 5 cm was attached, thanks to large planting base, to lateral basal segment of left lower lobe. The patient was treated by single port video assisted approach with a 4 cm skin incision. This case, in our knowledge, represents the first resection by single port VATS of a sessile SFTP with a large plating base and, more generally, the third SFTP resection treated by single portal access.

KEY WORDS: Solitary fibrous tumour, Uniportal VATS

Introduction

Solitary fibrous tumour of the pleura (SFTP) is a slow growing neoplasm, originating from mesenchymal cells. His hystogenesis is controversial (mesothelial or submesothelial origin) and, in the time, it has been defined in many different ways: localized pleural mesothelioma, localized fibroma, subpleural fibroma or submesothelial fibroma [1].

In this case we report a solitary fibrous tumour of the visceral pleura treated by single portal video assisted approach. This case represents, in our knowledge, the first resection by single port VATS of a sessile SFTP with a large planting base and, more generally, the third SFTP resection treated by single portal access.

Case presentation

A 72 years-old male patient came in our hospital with an accidental chest radiograph diagnosis of left endothoracic masse. The clinical history of the patient was characterised by hypertension and hypercholesterolemia. The

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CT scan revealed a 10 x 7 x 5 cm solid lesion in the inferior third of left hemithorax. The lesion had a large planting base to lateral basal segment of left lower lobe. The CT/PET scan didn't show any increasing metabolic activity of the mass and the CT guided fine needle biopsy was inconclusive. The preoperative respiratory functionality parameters showed a normal FEV1 (96%) and FVC (95%) and a normal VO2 max (80%).
The lesion was removed by uniportal VATS, on one lung ventilation, with the patient in right lateral decubitus. An anterior 4 cm incision in the 6th intercostal space was performed and a 10 mm-30° thoracoscope was introduced for exploring the pleural cavity. No rib spreading was performed.
The masse was totally removed by the use of an articulating stapler (Endo GIA™ Ultra, Covidien, USA) performing an "en-bloc" lateral basal sub-segmentectomy of left lower lobe for radicalism. So the specimen was easily removed by an endobag. A chest drain 28ch was inserted at the level of skin incision. The chest tube was removed in first day and the patient discharged home in second day without any complication. Final pathology revealed a solitary fibrous tumour of the visceral pleura. Immunohistochemistry showed cells positive for Vimentin, CD34, Actin and Actin1A4. The mythotic index was 4/10 high power field. No recurrences were occurred in the following 10 months.

Discussion

SFTP is an uncommon pleural tumour, originated from mesenchymal or submesenchymal cells with a slow growth. Approximately 1500 cases of SFTP have been reported in the literature until 2009 [1].
The diagnosis of SFTP is usually incidental on a chest radiograph. The apparition of chest pain, dyspnoea or cough is linked with the tumours dimensions (usually greater than 10 cm) [2].
The gold standard treatment is the complete surgical removal. In the time we have assisted to a change of surgical approach, more and more minimally invasive, from classical thoracotomy to VATS, with all advantages of minimally invasive treatment. Reviewing literature, this approach can especially be useful for small tumours (< 5 cm) that don't involve chest wall, but it's not good for the giant masses, that need of a thoracotomic approach [1,2].
Actually single portal VATS is taking more and more importance to perform pulmonary wedge resections for peripheral pulmonary nodules, in the treatment of primary pneumothorax or for performing lung lobectomies or other more complex resections [3].
In our report, we describe a sessile SFTP with a large planting base, treated by single portal video assisted approach. In literature, in only two cases [4,5] it has been

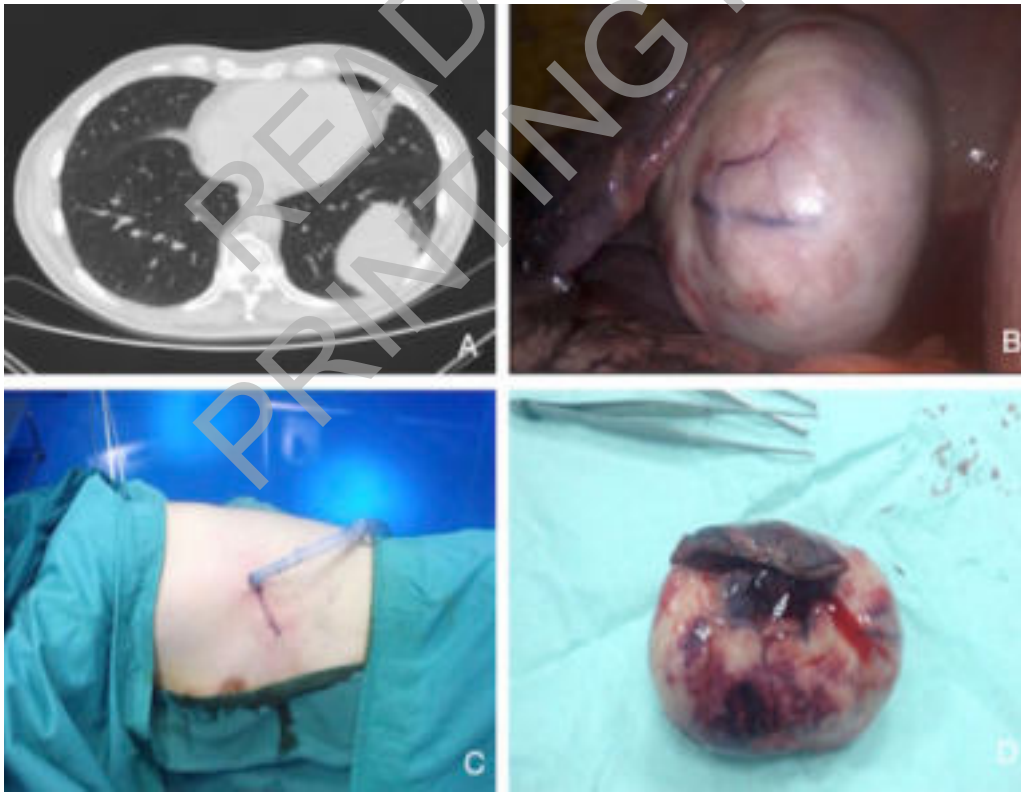

Fig. 1: A) CT scan image of SFTP that involves the left lower lobe. B) Intra-operatory image of SFTP with large planting base to left lower lobe C) 4-cm incision for uniportal access with 28ch chest tube. D) The specimen of 10x7x5cm with lung parenchyma (lateral basal inferior sub-segmentectomy).

described single portal approach in the management of SFTP. In all two cases, the tumour was small (4x3 cm in the first, 33x22mm in the second) and pedunculated. In our case, we speak about a bigger STFP (10 x 7 x 5 cm), sessile with a large planting base that forced us to perform a lung sub-segmentectomy in order to assure radicalism.

There are some advantages about single portal approach over conventional three ports VATS. Involving one intercostal space, without rib-spreading, single portal approach assures lower postoperative pain, shorter chest tube time and hospital stay length and better aesthetic results in the patients [3]. In this case, with an incision of 4 cm, we had the necessary space to introduce and mobilize a 30° thoracoscope, a clamp ring and an articulated stapler device, without an invalidating disturbance by the instruments. In addition, the use of endobag avoided the possible dissemination of tumour in pleural cavity or in the chest wall.

Riassunto

Il tumore fibroso solitario della pleura viscerale è una neoplasia rara che deriva dalle cellule mesenchimali adiacenti al tessuto mesoteliali di pleura. La resezione chirurgica è il trattamento di scelta nelle sia nelle lesione benigne che maligne. La recidiva locale può essere il risultato di una chirurgia incompleta o conservatrice, di una mancanza di identificazione dei lembi del tumore durante l'operazione o di crescita di una neoplasia sincrona indipendente da quello rimossa. La resezione chirurgica è anche gravata da qualche difficoltà come la dimensione del tumore, il rapporto con le strutture anatomiche viciniori e la identificazione del peduncolo vascolare. Riportiamo un caso di un uomo di 72 anni con un tumore fibroso solitario sessile della pleura viscerale. Il paziente è stato trattato mediante videotoracoscopia con approccio uniportale. Questo caso, rappresenta una resezione in VATS uniportale di un SFTP sessile con ampia base di impianto. In letteratura, solo due casi di SFTP sono stati trattati mediante approccio uniportale. In tutti i due casi, il tumore era piccolo (4x3 cm nel primo, nel secondo 33 x 22mm) e peduncolato. Nel nostro caso, si parla di un STFP di dimensioni maggiore, sessile e con larga base di impianto. I vantaggi dell'approccio uniportale rispetto alla tradizionale VATS triportale sono la riduzione del dolore post-operatorio, la minore durata di utilizzo dei tubi di drenaggio, la ridotta degenza ospedaliera ed un miglior risultato estetico.

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