www.medigraphic.org.mx

NCT

Neumol Cir Torax
Vol. 70 - Núm. 4:287-289
Octubre-diciembre 2011

Caso clínico

Surgical treatment of a giant solitary fibrous tumor of the pleura through two thoracotomy incisions. A case report

*Rafael Andrade-Alegre,** ✉ *Maylin Ruiz Valdés*‡

*Thoracic Surgery Section, Santo Tomás Hospital. Panamá, Republic of Panamá; ‡Radiology Department, Santo Tomás Hospital. Panamá, Republic of Panamá.

Trabajo recibido: 25-II-2010; aceptado: 10-XI-2011

ABSTRACT. Solitary fibrous tumors of the pleura are rare neoplasms and its clinical behavior is unpredictable. Giant tumors may present a surgical approach dilemma. A 63-year-old woman presented with history of progressive dyspnea. Chest roentgenogram and computed tomography revealed a huge tumor that occupied most of the left chest and shifted mediastinum to the right side. Patient initially underwent an extended left posterolateral thoracotomy but due to dense adhesions to the diaphragm, an eight intercostal space lateral thoracotomy was performed. This surgical approach helped us to complete in block resection, expedited surgery, and possibly avoiding intraoperative complications.

Key words: Solitary fibrous tumor of the pleura, surgery, thoracotomy.

RESUMEN. Los tumores fibrosos solitarios de pleura (TFSP) son neoplasias raras y su comportamiento clínico es impredecible. Los tumores gigantes pueden presentar un dilema en cuanto al abordaje quirúrgico. Una mujer de 63 años se presentó con historia de disnea progresiva. La radiografía de tórax y la tomografía computada del tórax reveló una gran tumoración que ocupaba la mayor parte del tórax izquierdo y desviaba el mediastino a la derecha. La paciente fue sometida a toracotomía posterolateral extendida izquierda, pero debido a la presencia de densas adherencias al diafragma, fue necesario realizar toracotomía lateral a nivel del octavo espacio intercostal. Este abordaje quirúrgico nos ayudó a completar la resección en bloque, aligerar la cirugía y probablemente evitar complicaciones intraoperatorias.

Palabras clave: Tumor fibroso solitario de pleura, cirugía, toracotomía.

INTRODUCTION

Solitary fibrous tumors of the pleura (SFTP) are rare neoplasms. They represent less than 5% of all pleural neoplasms.[1] As of 2002 approximately 800 cases have been reported in medical literature.[2] The choice of surgical approach for these tumors depends on its location, size and by spatial relations in the imaging studies.[3] We report our experience with a case of a large SFTP completely resected by two thoracotomies; an extended left posterolateral thoracotomy and an eight intercostal space lateral thoracotomy.

CLINICAL CASE

A 63-year-old woman was referred by her primary physician with history of progressive dyspnea of 5 month's duration. On examination, the patient was in respiratory distress, breath sounds were abolished in the lower two thirds of the left chest. Her past medical history noted treatment of tuberculosis more than 5 years ago. A chest roentgenogram revealed an almost complete opacification of the left hemithorax with tracheal shift to the right (figure 1A). A subsequent Computed tomography (CT) scan of the chest disclosed a large tumor that occupied most of the left chest and shifted mediastinum to the right side. No pleural effusion or lymphadenopathy was detected (figure 1B). A Tru-Cut CT guided biopsy of the tumor revealed a spindle cell neoplasm.

The patient initially underwent an extended postero-lateral thoracotomy through the bed of the fifth rib. The tumor was almost completely dissected, but dense adhesions to the diaphragm prompted a second incision. A left lateral thoracotomy through the eight intercostal space was accomplished in order to divide the diaphragmatic adhesions and excise the entire tumor (figure 2). On gross view, the tumor was huge and encapsulated weighing 2.655 kg (figure 3). Microscopic examination was characterized by a haphazard distribution of spindle cells in a myxoid loose matrix–there were no mitosis, necrosis or pleomorphism. Immunohistochemical staining with CD34, Vimentin, bcl-2 was positive. Keratin, CD99, Desmin and S-100 were

Este artículo puede ser consultado en versión completa en http://**www.medigraphic.com/neumologia**

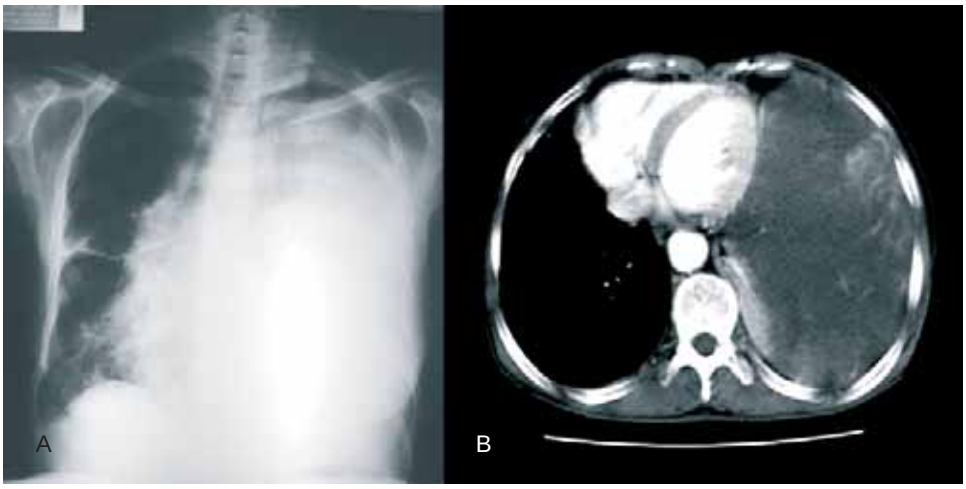

Figure 1. A) Chest roentgenogram disclosing a large left-side tumor and a shifted mediastinum to the right side. **B)** Chest CT scan revealing a large and well defined tumor. Note slight enhancement with the administration of contrast. Mediastinal shift to the right and atelectasis of the adjacent lung are apparent.

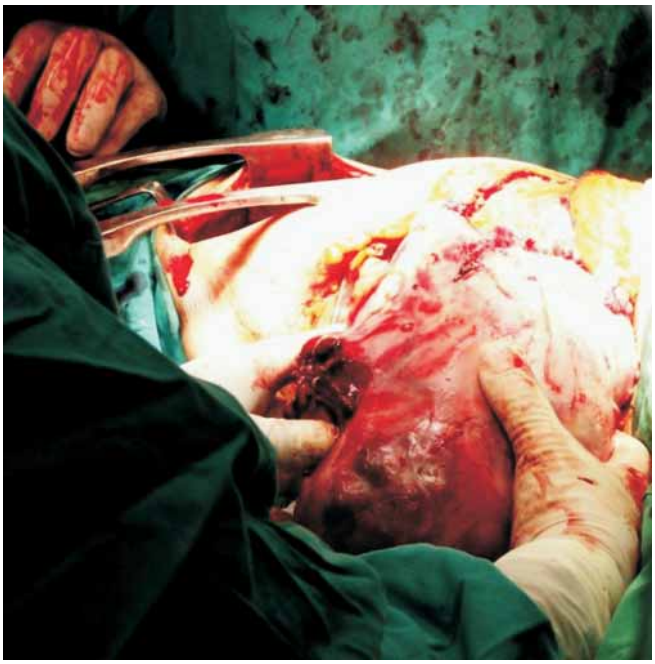

Figure 2. Intraoperative view showing the two thoracotomies performed to remove the entire tumor.

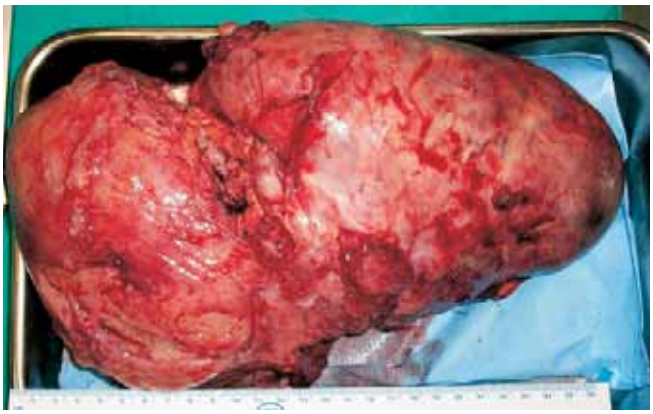

Figure 3. The completely resected surgical specimen measured 27.5 cm in its larger diameter.

negative. These findings confirmed the diagnosis of SFTP. The patient required mechanical ventilation for 3 days, and was discharged for home convalescence on postoperative day 12 with no complications. A follow up chest CT scan 12 months after surgery showed no signs of recurrence. She remains in good health 18 months after surgery.

DISCUSSION

Clinical behavior of SFTP is unpredictable. Usually they have an indolent clinical course, being asymptomatic for several years. Nonspecific symptoms of cough, chest pain and dyspnea occurs occasionally, specially with large tumors,[4] as in our case. CT scanning is a reliable and cost-effective tool in the diagnosis of SFTP. It also allows relationship evaluation of the tumor to neighboring structures, and assesses the resectability of the tumor.[5] In this regard, magnetic resonance imaging is the preferred method to appreciate the tumor relationship with the mediastinal and major vascular structures.[2,6] It is also more sensitive in excluding local invasion of the diaphragm and chest wall.[7] A Tru-Cut percutaneus biopsy was consistent with spindle cell neoplasm. Trucut biopsies seems to be more precise than fine needle aspiration biopsies.[8] Fine needle aspiration biopsies has an unacceptably low diagnostic accuracy.[9]

The operative approach for these tumors is dictated by the SFTP's size and location. Giant tumors may require extended posterolateral thoracotomies or hemiclamshell incisions.[9] Our patient was approached initially through

www.medigraphic.org.mx

an extended posterolateral thoracotomy. Dense adhesions to the diaphragm prevented the resection of the entire tumor; therefore, we elected to perform a lower lateral thoracotomy. This allowed to explore the area to confirm no tumoral invasion of the diaphragm which would have required resection and reconstruction. Adhesions were easily divided through this second incision. Surgical approach for giant tumors, consisting of two thoracotomies, has been infrequently mentioned in the medical literature.[5] Surgeons should be aware of this option, which can help to complete en block resection, expedite surgery, and avoid intraoperative complications.

The tumor was resected in its entirety and the histology did not show features of malignancy; however the patient should be submitted to long-term follow up as these tumors can recur from less than 2% to 63% –depending on the morphological and histological characteristics. Malignant transformation has also been well documented.[10] Because of the need for long term follow, chest roentgenograms of the cases instead of chest tomography might be more convenient.

Giant SFTP often requires large incisions such as extended posterolateral thoracotomy or hemiclamshel incision. We presented a case of a giant SFTP resected through two thoracotomies with good results. This approach may be an option for tumors of this type in selected cases.

REFERENCES

1. Nonaka M, Kadokura M, Takaba T. *Benign solitary fibrous tumor of the parietal pleura which invaded the intercostal muscle*. Lung Cancer 2001;31:325-329.
2. de Perrot M, Fischer S, Bründler MA, Sekine Y, Keshavjee S. *Solitary fibrous tumors of the pleura*. Ann Thorac Surg 2002;74:285-293.
3. Sung SH, Chang JW, Kim J, Lee KS, Han J, Park SI. *Solitary fibrous tumor of the pleura: surgical outcome and clinical course*. Ann Thorac Surg 2005;79:303-307.
4. Regal MA, Al Rubaish AM, Al Ghoneimy YF, Hammad RI. *Solitary fibrous tumors of the pleura*. Asian Cardiovasc Thorac Ann 2008;16:139-142.
5. Hu CK, Chang YL, Lin WC, Lee YC. *Resection of a giant thoracic solitary fibrous tumor through two separate thoracotomies*. J Thorac Cardiovasc Surg 2008;136:1077-1079.
6. Rena O, Filosso PL, Papalia E, *et ál. Solitary fibrous tumor of the pleura: surgical treatment*. Eur J CardioThorac Surg 2001;19:185-189.
7. Rosado-de-Christenson ML, Abbott GF, McAdams HP, Franks TJ, Galvin JR. *From the archives of the AFIP: Localized fibrous tumors of the pleura*. Radiographics 2003;23:759-783.
8. Weynand B, Nöel H, Goncette L, Noirhomme P, Collard P. *Solitary fibrous tumor of the pleura: a report of five cases diagnosed by transthoracic cutting needle biopsy*. Chest 1997;112:1424-1428.
9. Harrison-Phipps KM, Nichols FC, Schleck CD, *et ál. Solitary fibrous tumor of the pleura: results of surgical treatment and long-term prognosis*. J Thorac Cardiovasc Surg 2009;138:19-25.
10. Liu CC, Wang HW, Li FY, *et ál. Solitary fibrous tumors of the pleura: clinicopathological characteristics, immunohistochemical profiles, and surgical outcomes with long-term follow-up*. Thorac Cardiovasc Surg 2008;56:291-297.

✉ **Corresponding author:**
Rafael Andrade-Alegre, MD, FACS, FCCP.
Chief Thoracic Surgery Section Santo Tomás Hospital
P.O. Box: 0832-01450
Panamá, Republic of Panamá.
Telephone: (507)507-5600
Fax: (507) 229-6646
E-mail: toravasc@cwpanama.net

Los autores declaran no tener conflictos de interés

www.medigraphic.org.mx