Tanaffos (2004) 3(12), 69-73

Repair of Pulmonary Artery Aneurysm with Mersilene Mesh: a Case Report

Abdolhossein Davoodabadi[1], Ebrahim Razi[2]

[1]Department of Thoracic Surgery, [2]Department of Pulmonary Medicine, Kashan University of Medical Sciences and Health Services, KASHAN-IRAN.

ABSTRACT

True pulmonary artery aneurysm secondary to disintegration of its walls is extremely rare and may be mistaken with lung tumor. Sometimes it may be discovered during thoracotomy.

We present a 71- year old man with exertional dyspnea, cough and left sided chest wall pain who admitted to our hospital in April 1999 .Conventional imaging suggested a left parahilar mass. Bronchoscopy was normal. Due to suspected lung malignancy, the patient became candidate for lobectomy.

A huge pulmonary aneurysm was discovered at the time of thoracotomy. Since the patient could not tolerate pneumonectomy, a mersilene mesh was wrapped around the aneurysm and supported by it. He was followed up by obtaining chest x-ray, every 3 months in the first year and then every 6 months till now. There was no change in the size of the aneurysm and general condition of the patient is good. ***(Tanaffos 2004; 3(12): 69-73).***

Key Words: *Pulmonary artery, Aneurysm, Lung mass, Mesh mersilene repair*

INTRODUCTION

Pulmonary artery aneurysm is rarely seen in clinical practice. The majority of cases are associated with congenital cardiovascular diseases, infection, and trauma (1).

Idiopathic pulmonary artery aneurysm is extremely rare and the number of cases that have been reported in medical literature are limited (2). Also, repair of the pulmonary artery aneurysm with mersilene mesh has not been reported till now.

Correspondence to: Davoodabadi A
Tel: +98-361-55510045, Fax: +98-361-5558900
Email address: dawoodabadi_a@yahoo.com

CASE SUMMARIES

A 71-year-old man with complaints of exertional dyspnea, cough and left sided chest wall pain was admitted to our hospital in April 1999. He was a non-smoker with good general condition. No abnormality was detected in the cardiovascular and respiratory systems. Chest x-ray revealed a large opacity and well-defined mass in the left parahilar and left upper lobe (Fig-1).CT-scan suggested a left upper lobe mass (Fig-2).

Bronchoscopy was normal. Cytology was negative for malignancy and FEV1 was within the lower limits of normal.

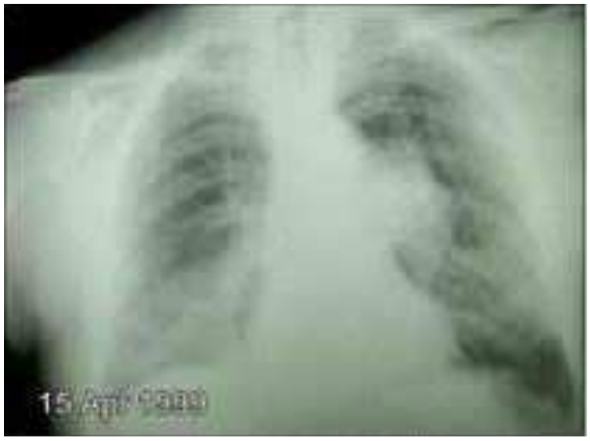

Figure1. Preoperative chest x- ray.

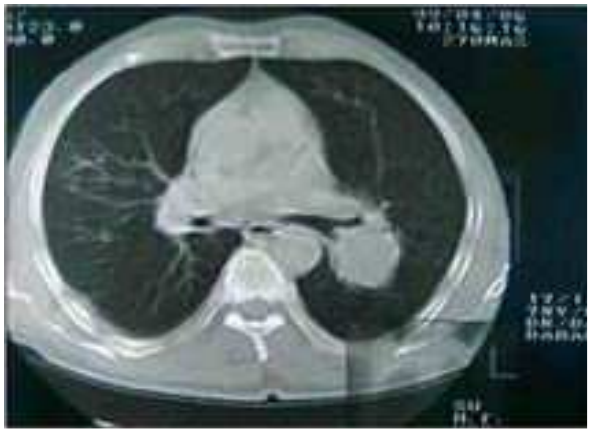

Figure2. Preoperative CT-scan suggested left parahilar mass.

Due to a suspected lung malignancy, the patient was scheduled for lobectomy. A huge sacular pulmonary aneurysm, 6 cm in diameter with extension to parenchyma was discovered at the time of thoracotomy. Adhesion to surrounding tissue was moderate and its wall was moderately thin. Considering the old age and limited lung volume which do not permit pneumonectomy, a mersilene mesh was wrapped around the aneurysm and was supported by it. Post operative recovery course was normal.

He was followed up by obtaining chest x-ray, every 3 months in the first year and then every 6 months till now. The size of aneurysm did not change and general condition of the patient is good (Figure 3, 4).

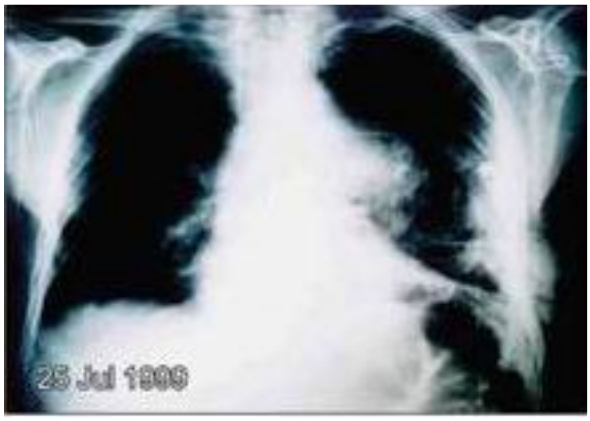

Figure3. CXR 3 months after the operation.

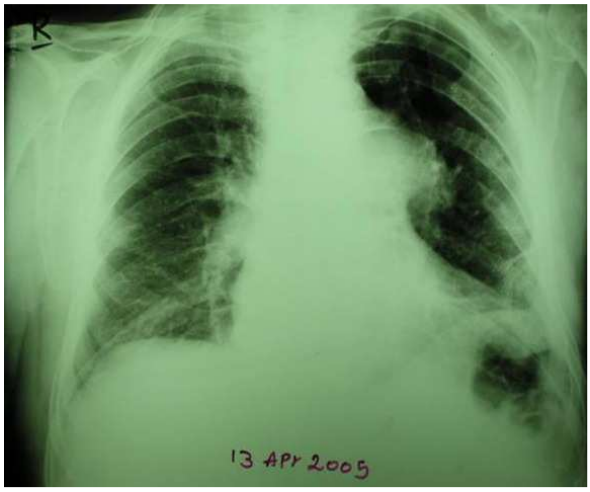

Figure4. The latest CXR showed that the size of aneurysm did not change.

DISCUSSION

Pulmonary artery aneurysm is a rare condition. It may be congenital or acquired. Acquired pulmonary artery aneurysm is more common and may be associated with cardiovascular diseases, long standing pulmonary hypertension (1), syphilis, tuberculosis (3), Behcet's disease (4) and cystic media necrosis of pulmonary arteries (5).

Idiopathic pulmonary artery aneurysm is extremely rare and only limited cases have been reported in medical literatures.

The clinical symptoms of pulmonary artery aneurysm, such as hemoptysis, exertional dyspnea, chest wall pain, fever, and cough have been reported (6).

Although pulmonary artery aneurysm could be diagnosed by performing MRI, helical CT, or digital subtraction pulmonary angiography before the operation (7, 8, 9), occasionally it may be mistaken with the lung tumors and is discovered during thoracotomy. Therefore, it must be considered as a part of differential diagnosis when an enlarged pulmonary hilar mass is observed on chest radiogram with normal bronchoscopy.

Surgical approach is generally considered life saving by preventing the rupture of the aneurysm by resecting it and pneumonectomy. Hence, a complete cure can be achieved (1). Some reports support conservative treatment (10, 11, 12); however, a long-term follow-up is necessary.

Peripheral and often solitary aneurysm rupture was happened in 60% of the patients. Ungaro et al. emphasized the necessity of definitive diagnosis and early treatment with conservative pulmonary resection (3). Recently, pulmonary artery aneurysm was treated with Dacron, (13) and pericardial patch (14).

CONCLUSION

Pulmonary artery aneurysm may be presented as a lung mass; and differential diagnosis for a lung malignancy should be considered (15).

Although some reports support the conservative treatment (10, 11, 12), surgical approach is generally considered life saving (3). To prevent the possibility of the rupture and sudden death, especially during the operation when the surgeon confronts with an unexpected pulmonary artery aneurysm, surgical repair with mersilene mesh is recommended. This method is an easy, safe and reliable modality which does not need pneumonectomy.

REFERENCES

1. Arom KV, Richardson JD, Grover FL, Ferris G, Trinkle JK. Pulmonary artery aneurysm. ***Am Surg*** 1978; 44 (10): 688-92.
2. Fang CC, Tsai CC. Idiopathic pulmonary artery aneurysm. ***J Formos Med Assoc*** 1996; 95 (11): 873- 6.
3. Ungaro R, Saab S, Almond CH, Kumar S. Solitary peripheral pulmonary artery aneurysms. Pathogenesis and surgical treatment. ***J Thorac Cardiovasc Surg*** 1976; 71 (4): 566- 71.
4. Hassine E, Bousnina S, Marniche K, Fennira H, Ben Khelil J, Ben Mustapha MA, et al. Pulmonary artery aneurysms in Behcet's disease: contribution of imaging in 5 cases. ***Ann Med Interne (Paris)*** 2002; 153 (3): 147- 52.
5. Natelson EA, Watts HD, Fred HL. Cystic medionecrosis of the pulmonary arteries. ***Chest*** 1970; 57 (4): 333- 5.
6. Veldtman GR, Dearani JA, Warnes CA. Low pressure giant pulmonary artery aneurysms in the adult: natural history and management strategies. ***Heart*** 2003; 89 (9): 1067- 70.
7. Remy-Jardin M, Remy J. Spiral CT angiography of the pulmonary circulation. ***Radiology*** 1999; 212 (3): 615- 36.
8. Barbier GH, Shettigar UR. Echocardiographic diagnosis of pulmonary artery aneurysm. ***J Fla Med Assoc*** 1995; 82 (7): 470- 2.
9. Shah HR, Stark JE, Buckner CB. Magnetic resonance imaging of pulmonary artery aneurysm. ***South Med J*** 1991; 84 (8): 1026- 8.
10. Casselman F, Meyns B, Herygers P, Verougstraete L, Van Elst F, Daenen W. Pulmonary artery aneurysm: is surgery always indicated? ***Acta Cardiol*** 1997; 52 (5): 431- 6.
11. Khalil MZ, Al-Nozha MM, Wani BA. Asymptomatic giant pulmonary artery aneurysm in an elderly male patient. ***Saudi Med J*** 2004; 25 (6): 802- 4.
12. Holm F, Palecek T, Linhart A, Reznicek V, Aschermann M. Idiopathic aneurysm of the pulmonary artery. ***Vnitr Lek*** 2003; 49 (3): 244- 7.

13. Hamawy AH, Cartledge RG, Girardi LN. Graft repair of a pulmonary artery aneurysm. ***Heart Surg Forum*** 2002; 5 (4): 396- 8.
14. Agarwal S, Chowdhury UK, Saxena A, Ray R, Sharma S, Airan B. Isolated idiopathic pulmonary artery aneurysm. ***Asian Cardiovasc Thorac Ann*** 2002; 10 (2): 167- 9.
15. Chung CW, Doherty JU, Kotler R, Finkelstein A, Dresdale A. Pulmonary artery aneurysm presenting as a lung mass. ***Chest*** 1995; 108 (4): 1164- 6.