



## Left Ventricular Pseudoaneurysm Perceived as a Left Lung Mass

### Sol Ventrikül Psödoanevrizması Olarak Algılanan Sol Akciğer Kitlesi

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#### ABSTRACT

Left ventricular pseudo-aneurysm is a rare complication of aneurysmectomy. We present a case of surgically-treated left ventricular pseudo-aneurysm which was diagnosed three years after coronary artery bypass grafting and left ventricular aneurysmectomy. The presenting symptoms, diagnostic evaluation and surgical repair are described.

**Key Words:** Iatrogenic, left ventricular, pseudo-aneurysm, lung mass, postaneurysmectomy

#### ÖZET

Sol ventrikül psödoanevrizması anevrizmektominin nadir bir komplikasyonudur. Çalışmamızda üç yıl önce koroner arter bypass grefti ve sol ventrikül anevrizmektomisi ile teşhisi konulan sonrasında cerrahi olarak sol ventrikül psödoanevrizması tedavi edilen bir vakayı sunuyoruz. Burada ayrıca eşlik eden semptomlar, teşhis değerlendirmesi ve cerrahi tedavi prosedürleri anlatılacaktır.

**Anahtar Kelimeler:** Latrojenik, sol ventrikül, psödoanevrizma, akciğer kitlesi, post anevrizmektomi

#### INTRODUCTION

Acquired pseudoaneurysm of the left ventricle is rare disorder that usually occurs after transmural myocardial infarction or after cardiac surgery<sup>1-6</sup>. The development of a pseudoaneurysm is a rare event after resection of a left ventricular aneurysm.

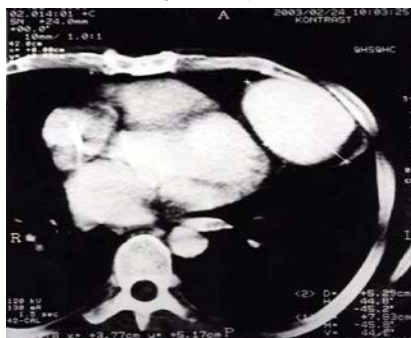
#### Case Report

A 43-year-old man presented with retrosternal pain and dyspnea about three years after he had coronary artery bypass grafting and aneurysmectomy in another institution. On admission his physical examination was normal. His arterial blood pressure was 105/60 mmHg, heart rate was 86 beats/min, and no cardiac murmur was noted. His chest roentgenogram

showed an enlarged cardiac silhouette and also a poorly circumscribed basal mass in the left lung . Computerized tomography however showed that the lesion perceived as a pulmonary mass in the roentgenogram was actually an antero-apical left ventricular pseudo-aneurysm (Figure 1). Two-dimensional echocardiography revealed the presence of a 10x5cm cavity communicating with the left ventricle through a hole in the antero-apical wall of the left ventricle measuring approximately 2x2cm (Figure 2 ). This was also confirmed by left ventriculography (Figure 3).

The operation was done through median sternotomy with femoro-femoral cardiopulmonary bypass, moderate hypothermia and cold-blood cardioplegic arrest. After preparation of the wall of the false aneurysm, the aneurysmal sack was

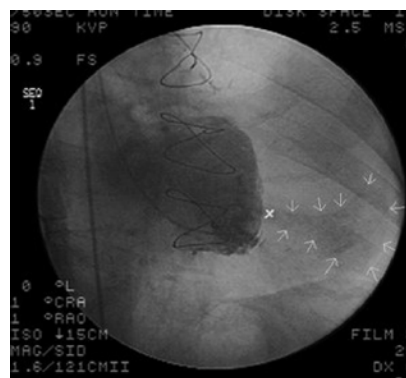
opened and the hole in the antero-apical wall of the left ventricle was closed with several deeply placed 3-0 prolene sutures reinforced by Teflon felt. The patient was easily weaned off bypass. Postoperative trans-thoracic echocardiography showed no residual communications. The postoperative course was uneventful and the patient was discharged on the tenth postoperative day. At one year postoperative follow-up, the patient was in good physical condition.



**Figure 1.** Computed tomography scan of the chest showing a large left ventricular pseudoaneurysm (arrows) perceived as a left pulmonary mass.



**Figure 2.** Transthoracic echocardiography showing a postsurgical left ventricular pseudoaneurysm (LV: Left ventricle).



**Figure 3.** Left ventriculography (enddiastolic frame) showing a pseudoaneurysm and orifice. The arrow points to the pseudoaneurysm (x: Orifice).

## DISCUSSION

In this article a rare complication of left ventricular aneurysmectomy is described. Left ventricular pseudo-aneurysms commonly develop as a complication of transmural myocardial infarction (55%) or cardiac operations, such as mitral valve replacement (33%), although they may also develop as a result of trauma (7%), infection of foreign materials such as teflon felts, myocarditis or endocarditis (5%), rupture of a true aneurysm, iatrogenic factors such as myocardial biopsy, pericardiocentesis, cardiac catheterization, ablation of accessory pathways and epicardial placement of electrodes<sup>1,2,3,4,5,6,9,10</sup>.

Infrequently, technical failure is identified as a cause of pseudo-aneurysm arising in the closure line of ventriculotomy [Davidson 1977]. Occasional cases of pseudo-aneurysm after resection of left ventricular true aneurysm were reported previously<sup>7,8</sup>. In all of these cases, as in the present case, the pseudo-aneurysms developed due to a partial dehiscence of sutures after aneurysmectomy.

Although echocardiography, Computer tomography scan or Magnetic rezonans suffice to confirm the diagnosis, left ventriculography was classically described as the diagnostic procedure of choice [Davidson 1977].

The surgical repair of ventricular pseudoaneurysms depends on their origin, size and local extension. Adhesions, presence of bypass grafts and occasionally, difficult location for surgical access represent the possible technical difficulties<sup>3,7,8</sup>. In the present case, resection of the apico-anterior pseudo-aneurysm was easily performed through midline sternotomy by using femoro-femoral cardiopulmonary bypass, moderate systemic hypothermia and antegrade cold-blood cardioplegia. For recurrent large pseudo-aneurysms, surgical repair through lateral thoracotomy in deep hypothermic cardiac arrest with low-flow perfusion is also proposed as an alternative<sup>8</sup>.

In conclusion, in patients who had left ventriculotomy, the appearances of a post-operative left paracardial mass on the chest roentgenogram should raise the suspicion of a possible pseudoaneurysm.

## REFERENCES

1. Komeda M, David TE. Surgical treatment of postinfarction false aneurysm of the left ventricle. J Thorac Cardiovasc Surg. 1993; 106:1189-91.
2. Sakai K, Nakamura K, Ishizuka N et al. Echocardiographic findings and clinical features of left ventricular pseudoaneurysm after mitral valve replacement. Am Heart J. 1992; 124: 975-82.
3. Pretre R, Linka A, Jenni R et al. Surgical treatment of acquired left ventricular pseudoaneurysms. Ann Thorac Surg. 2000; 70: 553-7.
4. Frances C, Romero A, Grady D. Left ventricular pseudoaneurysm. J Am Coll Cardiol. 1998; 32: 557-61.
5. Davidson KH, Parisi AG, Harrington JJ. Pseudoaneurysm of the left ventricle: an unusual echocardiographic presentation. Ann Intern Med. 1977; 86: 430-3.
6. Maselli D, Micalizzi E, Pizio R. Posttraumatic left ventricular pseudoaneurysm due to intramyocardial dissecting hematoma. Ann Thorac Surg. 1997; 64: 830-1.
7. Rao MS, Vanilyanath P, Taneja K. Recurrent pseudoaneurysm of the left ventricle with subcutaneous herniation into the chest wall. Tex Heart Inst J. 1998; 25: 309-11.
8. Bauer M, Musci M, Pasic M. Surgical treatment of a chest-wall penetrating left ventricular pseudoaneurysm. Ann Thorac Surg. 2000; 70: 275-6.9.
9. Souza SSL, Mesquita AA, Chula DE. Iatrogenic left ventricular pseudoaneurysm. Ann Thorac Surg. 2001; 72: 1388-9.
10. Ruvolon G, Greco E, Speziale G. Surgical repair of pseudo-aneurysm arising from a true chronic aneurysm of the left ventricular lateral wall. Eur J Cardiothorac Surg. 1994; 8:449-50.

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