Case report

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SURGICAL TREATMENT OF GIANT PERICARDIAL CYST THROUGH THE LATERAL THORACOTOMY

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Pericardial cysts are uncommon benign tumors with the prevalence about 7% of all mediastinal tumors. Patients are mostly asymptomatic unless when cysts compress major anatomic structures in the chest cavity. We represented a patient with a pericardial cyst near to the apex of the heart. Magnetic resonance examination revealed 9 x 4 cm cystic formation. Surgical treatment was performed through left side lateral thoracotomy without cardio-pulmonary bypass support. Tumorous formation was completely resected and sent for the pathohistological examination. Surgical or percutaneous treatment for pericardial cysts might be occasionally necessary, depending on the location of the cyst and its relationship with the adjacent structures. Morbidity and mortality are low. Surgery has been demonstrated as the only definitive curative treatment.

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Key words: *pericardial cyst, lateral thoracotomy*

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Introduction-Background

Pericardial cysts are uncommon benign tumors with prevalence about 7% of all mediastinal tumors (1, 2). They usually arise from failure of fusion of one of the mesenchymal lacunae that form the pericardial sac (3). Etiology of pericardial cyst could be congenital, inflammatory (rheumatic pericarditis, bacterial infection particularly tuberculosis, echinococcosis), traumatic and after cardiac surgery (4). The size of the cysts varies from 2 to 28 cm (5). They are usually found in the third or fourth decade of life, male and the females are affected equally.

Patients are mostly asymptomatic unless major anatomic structures compressed with tumor or rupture of the cyst occurs. The most common symptoms are dyspnea, chest pain, or persistent cough. Hemoptysis, fever, and pneumothorax are unusual presentations (6).

In 70% of the cases, these tumors are located in right cardiophrenic angle, 22% in the left cardiophrenic angle and in 8% cases are located in the posterior or the anterior-superior part of the mediastinum.

However, rarely, this pathology is associated with serious complications such as cardiac tamponade, cyst rupture or even sudden death (7).

Case presentation

A 69 year old male with a history of cardiac weakness and arrhythmia was admitted to the hospital. The chest roentgenography presented supradiaphragmatic oval homogenous shading on the right side and enlarged cardiac vessel silhouette. The transesophageal examination showed large non-homogeneous mass (dimensions 4.5 x 9 cm), near to the lateral wall of the left ventricle without compressive effect on the left heart. Magnetic resonance scan of the heart revealed tumorous formation dimension 90 x 50 mm (Figure 1). The pericardial cyst was near to the left ventricle without communication with chamber.

Surgical treatment was performed through the lateral thoracotomy, without cardio – pulmonary bypass and pericardial sac dissection. On the right side and outside the pericardium single, soft and filled with liquidity pericardial cyst was found (Figure 2).

Intraoperative dimension was approximately 9 x 4.5 cm in diameter. Total surgical excision was performed (Figure 3).

The further postoperative period was uneventful.

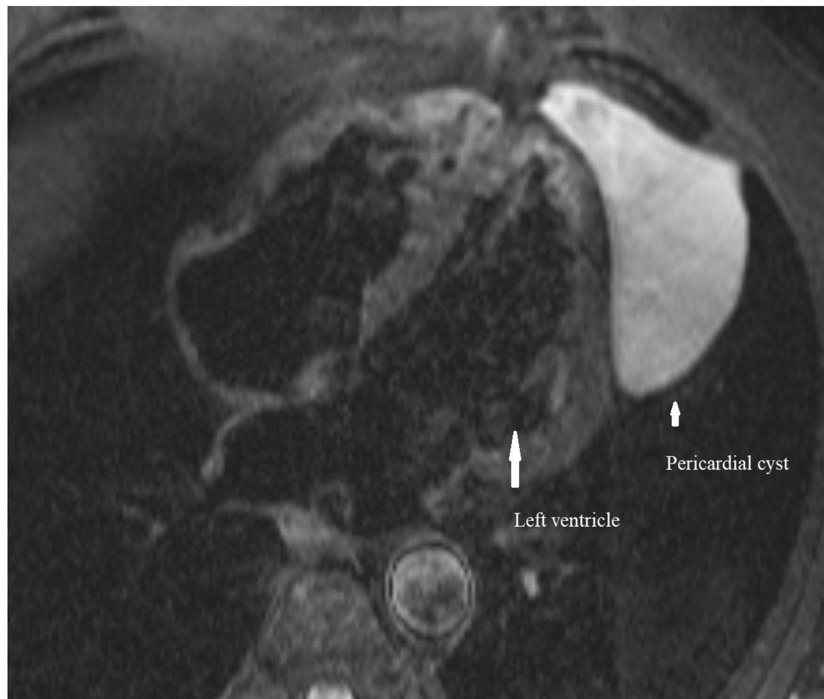

Figure 1. Magnetic resonance scan revealed pericardial cyst close to the left ventricle

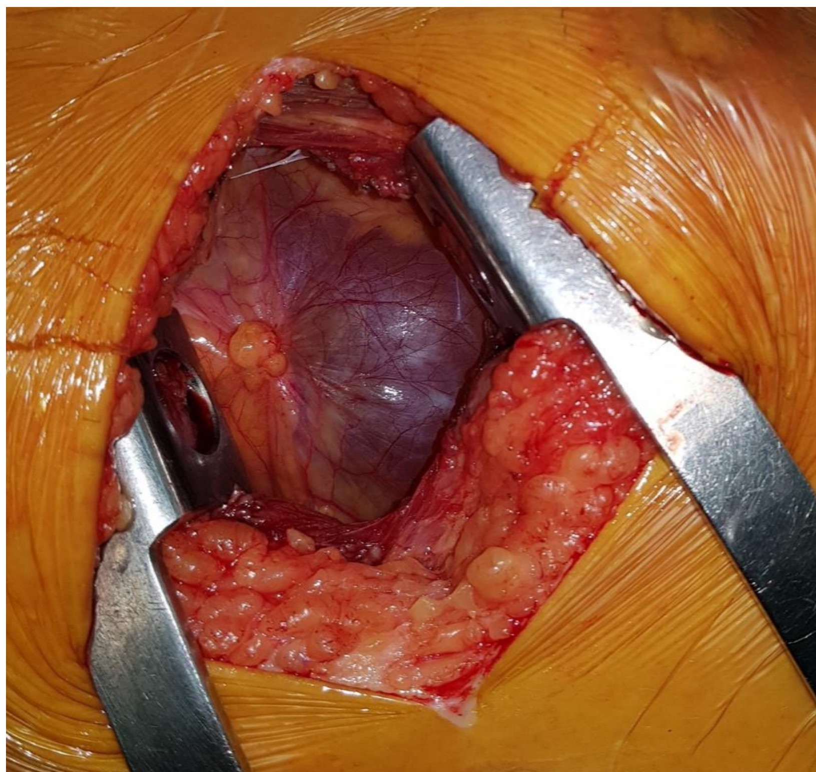

Figure 2. Surgical view on the pericardial cyst through the left thoracotomy

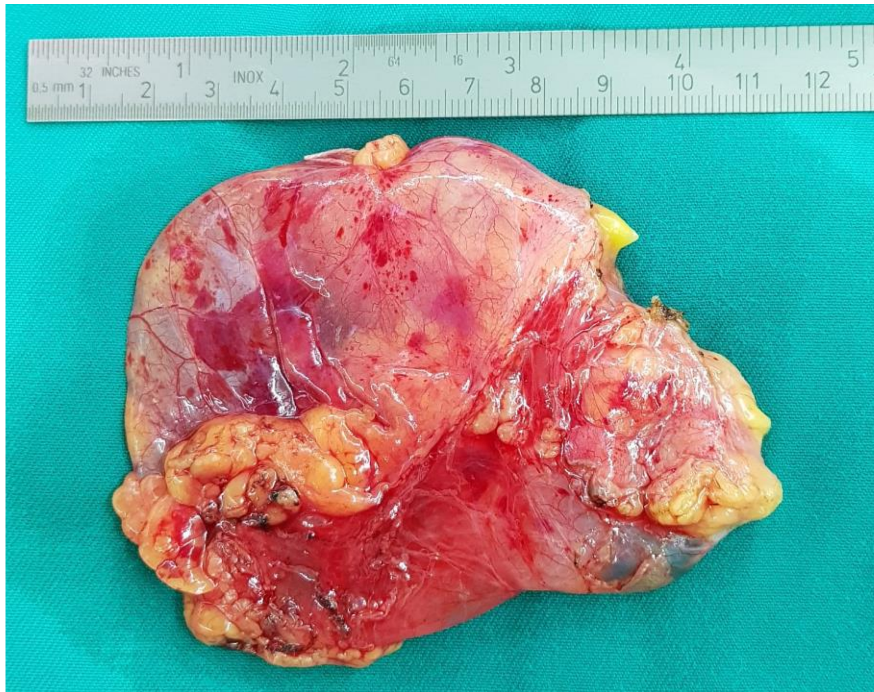

Figure 3. Dimensions of extirpated pericardial cyst

Discussion

Pericardial cyst is an uncommon benign congenital anomaly. The cyst walls are composed of connective tissue and a single layer of mesothelial cells, and they usually contain clear fluid (7). Most of them are asymptomatic (50%-75%) and found incidentally during routine chest roentgenography or echocardiography. Only 25% to 30% of patients complain of chest discomfort, cough, dyspnea, or paroxysmal tachycardia. Serious complications such as infection, vascular erosion, ventricular outlet obstructions or sudden cardiac death are extremely rare (8). The differential diagnosis should take into consideration solid tumors, hydatid cysts and mesotheliomas (9). Additional diagnostic modalities that may find pericardial cysts include transthoracic echocardiography, CT, and MRI of the chest (7). Computerized tomography scan (CT scan) is considered as best modality for diagnosis and follow up as it provide excellent delineation of the pericardial anatomy and can aid in the precise localization and characterization of various pericardial lesions, including effusion, pericardial thickening, pericardial masses, and congenital anomalies (10, 11). Magnetic resonance imaging is another useful imaging modality and the fluid in the pericardial cyst produce hyperintense signal on T2-weighted MRI images and hypointense signals on T1-weighted images (11). Management of pericardial cysts depends on their symptom. If the patient is asymptomatic, serial echocardiography is enough, but if the patient is symptomatic or reveals an increase in the size of the cyst or has solid component in the cyst cavity in the serial follow-up, a cyst resection has been the most favored approach with thoracotomy, sternotomy or video-assisted thoracic surgery (VATS) (7). Since operative risks of minimally invasive techniques are extremely low, it would seem reasonable to offer resection for all pericardial cysts in otherwise healthy patients for whom the risk of surgery is low. Aspiration is another method, but one of third have shown recurrence. Morbidity and mortality are low. Surgery has been demonstrated as the only definitive curative treatment (10).

Conclusion

Mortality and morbidity of this pathology are very low. Surgical treatment could be a good option for treatment of giant pericardial cyst. With the aim to exclude complications after median sternotomy, lateral thoracotomy might be a perfect alternative approach for surgical treatment. Surgery has been demonstrated as the only definitive curative treatment.

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Prikaz bolesnika

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HIRURŠKO LEČENJE GIGANTSKE PERIKARDNE CISTE KROZ LATERALNU TORAKOTOMIJU

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Perikardne ciste predstavljaju retke benigne tumore sa ukupnom prevalencijom oko 7% svih medijastinalnih tumora. Obično su bolesnici bez simptomatologije, izuzev kada cista komprimuje anatomske strukture unutar grudnog koša. Mi smo predstavili veliku perikardnu cistu lokalizovanu bluzu srčanog vrha. Magnetna rezonanca je kod bolesnika detektovala cističnu formaciju dimenzija 9 cm x 4 cm. Hirurška procedura izvedena je kroz levu lateralnu torakotomiju bez primene kardiopulmonalnog bajpasa kao podrške. Čitava tumorska formacija izvađena je i poslata na dalja patohistološka ispitivanja. Hirurška ili perkutana procedura neophodna je za lečenje perikardnih cisti, zavisno od lokalizacije i odnosa sa ostalim strukturama. Stope morbiditeta i mortalita su niske. Hirurška intervencija predstavlja jedini definitivni način lečenja.

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Ključne reči: *perikarda cista, lateralna torakotomija*

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