

## CASE REPORT

# Pericardial Cyst: A Case Report

S Philip MS\*<sup>1</sup>, P Lachowsky<sup>1</sup>, M Javed<sup>1</sup>, M Di Le<sup>1</sup>, C L Fisher PhD<sup>2</sup>

<sup>1</sup>Texas College of Osteopathic Medicine

<sup>2</sup>Center for Anatomical Sciences, University of North Texas Health Science Center

## Background

Pericardial cysts have an occurrence of 1:100,000 and are commonly noted in the right (70%) or left (22%) cardiophrenic angle [1, 5]. Pericardial cysts are usually benign anomalies that can be congenital or idiopathic. They typically arise from the mesenchymal lacunae that forms the pericardial sac failing to fuse or from a disconnected mesenchymal lacunae which unites to form the pericardial celom. Pericardial cysts originate from the ventral recess of the pericardial celom [1]. Other documented etiologies of pericardial cysts include inflammation, such as rheumatic pericarditis, bacterial infection from tuberculosis, trauma, and post-cardiac surgery [2]. They are rarely found in other locations of the pericardium, specifically the anterior or posterior superior mediastinum (8%). The size of the cyst normally ranges from 1 to 5 cm, with some cases reporting sizes



**Figure 1:** Anterior view of the thoracic cavity with the heart and lungs in situ. The pericardial cyst can be seen between the heart and the mediastinal surface of lung of the left lung.



**Figure 2:** A closer view of the pericardial cyst.

as large as 28 cm [2]. In this case report, the cyst was found at the aortopulmonary window, the narrow space between the aortic arch and the pulmonary artery. This window houses the ligamentum arteriosum, left recurrent laryngeal nerve, and lymph nodes. It is a common location for lymphadenopathies, but is a less common location for tumors, cysts, or aneurysms, further signifying the rarity of our finding.

\*Correspondence to: Sarah Philip, Texas College of Osteopathic Medicine, University of North Texas Health Science Center, USA, E-mail: Sarah.Philip [AT] my.unthsc [DOT] edu

Received: Sept 07, 2019; Accepted: Sept 16, 2019; Published: Sept 20, 2019

\*This article is reviewed by "M. chan (Hongkong)



**Figure 3:** The pericardial cyst with parietal pericardium, mediastinal pleura, and adipose tissue reflected to the right.



**Figure 4:** The pericardial cyst was ruptured and drained of fluid to expose the interior of the cyst.

### Case Information

During a routine cadaver dissection of a 91-year-old Caucasian female, a pericardial cyst was noted in the aortopulmonary window, an unusual location for such cysts. The cause of death was identified as a cerebrovascular accident, unrelated to the cyst. No other past medical history was recorded with this cadaver donation, although the lungs showed possible evidence of smoking. We were not made aware of any previous imaging performed on the specimen, and there was no mention of any symptoms related to the cyst. The specimen was thin with no evidence of surgeries or medical procedures and no other pathology or variations of the heart were noted. The cadaver had an abdominal aortic aneurysm located just superior to the aortic bifurcation measuring 3.5-4 cm, as well as evidence of atherosclerosis of the common carotid arteries.

### Discussion

Pericardial cysts are largely asymptomatic; although atypical chest pain, dyspnea, and persistent cough may occur.<sup>2</sup> However, if left untreated, pericardial cysts may lead to complications of hemodynamic and obstructive problems related to the cyst size and displacement of the heart or great vessels, as well as hemorrhage secondary to cystic erosion of the superior vena cava or right ventricular wall [3].

Pericardial cysts may also cause cardiac tamponade, right ventricular outflow tract obstruction, sudden cardiac death, syncope, and congestive heart failure [3]. Fortunately, most pericardial cysts remain asymptomatic throughout life and do not require treatment. However, in cases that do require treatment, options include surgical removal, endoscopic

resection, and percutaneous aspiration. The choice of treatment depends strongly on the characteristics and location of the cyst and the patient's surgical risk, and minimally invasive options are generally preferred [4].

These cysts are often asymptomatic, incidental findings on chest x-ray, but some patients may present with complications consisting of dyspnea, cough, and hemoptysis secondary to the compression of structures surrounding the cyst. When found on chest x-ray, further imaging is indicated to differentiate a pericardial cyst from other, less benign, pericardial abnormalities, such as pericardial effusion, pericardial masses, and congenital defects. CT scan without contrast is the imaging modality of choice for differentiation of pericardial cysts, though cardiac MRI and echocardiography can be used as well if CT scan is inconclusive. When viewed on CT, pericardial cysts should appear as thin walled, sharply defined, and homogenous masses that tend to be oval in shape [1].

### Conclusion

This case report serves to expand the existing knowledge on the anatomical aspects of rare pericardial cyst locations and highlights the importance of locating and treating cysts in the benign state [5]. Knowledge of rare pericardial cyst locations is necessary for clinicians and surgeons during diagnostic and therapeutic procedures, and as a result, current clinical guidelines should take rare variants into consideration.

### Acknowledgements

The authors would like to express our gratitude to the donors of the Willed Body Program. Their donation has helped further the education of students and science. We are grateful beyond words.

## References

1. Kar SK, Ganguly T, Dasgupta S, Mitra M, Bhattacharya R (2015) Pericardial cyst: a review of historical perspective and current concept of diagnosis and management. *Interventional Cardiology Journal* [[View Article](#)]
2. Makar M, Makar, G, Yousef K (2018) Large Pericardial Cyst Presenting as Acute Cough: A Rare Case Report. *Case Reports in Cardiology* [[View Article](#)]
3. Aertker RA, Cheong BY, Lufschanowski R (2016) Inflammation and Rupture of a Congenital Pericardial Cyst Manifesting Itself as an Acute Chest Pain Syndrome. *Texas Heart Institute Journal* 43:537-540. [[View Article](#)]
4. Varvarousis D, Tampakis K, Dremetsikas K, Konstantinedes P, Mantas, I (2015) Pericardial cyst: An unusual cause of chest pain. *Journal of Cardiology Cases* 12:130-132. [[View Article](#)]
5. Hekmat M, Ghaderi H, Tatari H, Arjmand Shabestari A, Mirjafari SA (2016) Giant Pericardial Cyst: A Case Report and Review of Literature. *Iran J Radiol* 13:e21921. [[View Article](#)]

**Citation:** S Philip MS, Lachowsky P, Javed M, Di Le M, Fisher CL (2019) Pericardial Cyst: A Case Report. *J Anat Physiol Stud* 3: 001-003.

**Copyright:** © 2019 S Philip MS, et al. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.