Open Journal of
Clinical & Medical
Case Reports

Volume 8 (2022)
Issue 14

ISSN: 2379-1039

Huge left atrial myxoma causing pulmonary hypertension: A case study in Malaysia

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Abstract

Primary tumours in the heart are considered rare. Among these rare tumours, atrial myxomas are the most common type of tumours with the majority of it originating in the left atrium. Though benign in nature, the tumour can potentially cause severe complications such as cardiac dysfunction and stroke and thus should be removed as soon as it is discovered. This case study discusses the unusual size of this patient's left atrial myxoma and its relationship to its symptoms as well as its prognosis.

Abstract

Cardiac tumours; Myxoma; Surgery; Cardiothoracic; Pulmonary hypertension.

Introduction

Primary tumours of cardiac origin are rare even in major heart surgery centres [1]. Atrial myxomas are the most common primary benign tumour of the heart encompassing 50-70% of all cardiac tumours. 75% of atrial myxomas originate from the left atrium and 15-20% originating from the right atrium [3]. Mean age of atrial myxoma patients was at 50 years and females are significantly more likely to get it compared to men [3]. Size of atrial myxomas range from 5 to 6 cm on average [3,4]. It is normally found incidentally [3]. Though benign, patient is at risk of cardiac dysfunction and embolic stroke as the tumour persist [1]. Thus, the need for excision as soon as possible upon discovery. This case report describes the case of a patient with an unusually large left atrial myxoma causing mitral valve dysfunction and pulmonary hypertension.

Case Report

50 years old male of Indian ethnicity was referred to the cardiothoracic department of our hospital for excision of left atrial myxoma. The patient has a background of single vessel disease with history of an-

gioplasty, Chronic Obstructive Pulmonary Disease (COPD), past history of Acute Coronary Syndrome (ACS) and hypertension.

Patient's vital signs were within normal ranges, his Electrocardiogram (ECG) showed sinus rhythm. The myxoma was found incidentally on Transthoracic Echocardiogram (TTE) and the size of the mass was confirmed to be 5 cm x 5 cm attached to the interatrial septum with one third of the mass extending to the left ventricle (Figure 1). His left ventricle A normal ejective fraction LVEF was 50-55%, with mild Mitral Regurgitation (MR), moderate to severe Mitral Stenosis (MS) and Tricuspid Tegurgitation (TR). It was also showed high Pulmonary Arterial Systolic Pressure (PASP) with 73 mmHg. On computed Tomography (CT) of the thoracic region (CECT thorax), it showed a 5 cm x 4 cm x 3 cm large mass attached to the atrial septum in the left atrium.

We performed a median sternotomy and excised the tumour via trans-septal approach while commenced the patient on cardiopulmonary bypass. A soft mass of 9 cm x 6 cm x 1 cm size was excised (Figure 2). The mitral valve function was assessed intra operatively using a Transoesophageal Echocardiogram (TOE) and only a mild MR was detected. Patient recovered well from surgery.

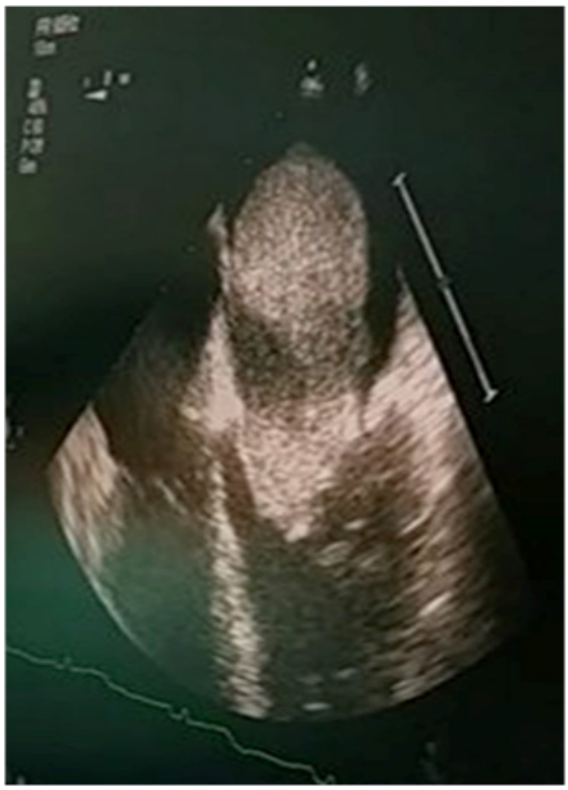

Figure 1: TTE of patient showing left atrial myxoma of septal origin.

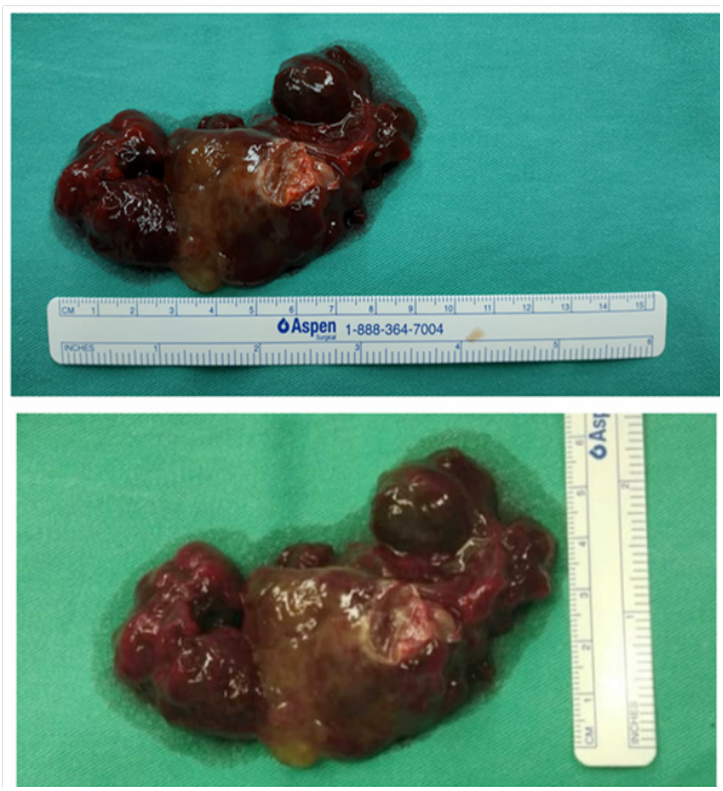

Figure 2: Gross appearance of excised atrial myxoma.

Discussion

The myxoma resected measured 9 cm x 6 cm x 1 cm which is approximately twice the size of the average cardiac myxoma. In Lee and et al.'s study, the mean myxoma length was 4.73 cm with 11 cm being the longest [4]. In the same study, only 2 were over 10 cm in length [4]. The myxoma we extracted was nearly twice the average size.

Our patient initially showed obvious mitral valve dysfunction on TTE. He presented with mild MR and severe MS secondary to the myxoma. 10.2% of cardiac myxomas of septal origin cause MS [5] due the tumour obstructing the flow. However, the prevalence of MR secondary to cardiac myxomas of septal origin are undocumented but there are cases where MRs are confirmed to be associated with left atrial myxoma [6]. Theoretically, the larger the tumour, the greater the mitral dysfunction especially in terms of stenosis due to a larger flow obstruction. However, no studies documenting the relationship between the tumour size and the mitral valve dysfunction could be found. 3.2% of patients with left atrial myxoma require mitral valve replacements due to permanent valve damage [4]. Fortunately, in this case, peri-operatively, with visualization of the mitral valve function through the TOE, the mitral valve function was seen to improve after removal of the tumour.

The patient also had pulmonary hypertension at 73 mmHg attributed to the myxoma. Pulmonary hypertension is a recognized complication of left atrial myxomas. Typically, the pulmonary hypertension will resolve after extraction of the tumour [7,8]. In a study of 29 left atrial myxomas with pulmonary hypertension, 5 patient's pulmonary pressure immediately decreased after tumour excision [9]. The study also demonstrated the correlation of the patient's pulmonary artery pressure and the left atrial myxoma's size. An increased tumour size led to worsen pulmonary artery, while excision of the tumour overall improves the pulmonary artery pressure [9]. Our patient has a left atrial myxoma of 9 cm x 6 cm x 1 cm which is unusually large compared to the average size which is 5 cm [3,4]. Surprisingly, though they present with more severe symptoms, the rate of recurrence of large myxomas are less compared to their smaller counterparts [10]. After the excision of the tumour, our patient's pulmonary hypertension resolved and is currently recuperating well.

Conclusion

This study highlights an unusually large left atrial myxoma and its possible presentation as well as its prognosis compared to a smaller tumour.

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Manuscript Information: Received: August 05, 2022; Accepted: September 07, 2022; Published: September 09, 2022

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Citation: Hu ASL, Law PS, Syed Rasul SH, Simon JV. Huge left atrial myxoma causing pulmonary hypertension: A case study in Malaysia. Open J Clin Med Case Rep. 2022; 1904.