

Extremely rapid growth of a left atrial myxoma

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CASE REPORT

A 56-year-old lady presented to the Accident and Emergency department with worsening shortness of breath, decreased exercise tolerance, orthopnea, paroxysmal nocturnal dyspnea, and recurrent dizzy spells. Symptoms had been persistent in the last one month but worsened over the last two weeks prior to presentation. She is a professional horse rider/trainer and has had multiple trauma to her hip following falls over the past 17 years. Her medical history includes previous small left cerebellar infarct 10 years ago, asthma, previous multiple trauma to the hip with open reduction and internal fixation (ORIF) to the pelvis and right hip replacement, awaiting left total hip replacement, spondylolisthesis L5/S1, previous pulmonary embolism two years prior, previous fall from a horse resulting in fractured clavicle (ORIF right clavicle) and ribs two years prior, lifetime non-smoker. She has had multiple computed tomography (CT) scans for these reasons which were available for comparison (Video 1).

At presentation, she was dyspneic at rest (NYHA IV) and tachycardic, bilateral crepitations with a soft mid diastolic murmur at the cardiac apex.

D-dimer was 1407 ng/mL, with a mild Troponin T rise of 17 ng/L. Emergency department suspected pulmonary embolism and an urgent computed tomography pulmonary angiogram (CTPA) revealed a large filling defect in the left atrium (LA) measuring 6.2 cm by 4.2 cm (Figure 1). She was reviewed by the cardiologist and trans-thoracic echocardiogram confirmed a large mobile mass in the LA measuring 7.67 cm by 3.46 cm. The mass was attached to the left superior pulmonary vein area, plunged into the left ventricle obstructing the mitral orifice in diastole. Right ventricle was dilated with preserved function (Figure 2) (Video 2).

Her brain natriuretic peptide (BNP) was 4269 pg/mL. She was managed for decompensated heart failure due to obstructive atrial myxoma, commenced on diuretics, anticoagulation, and urgent referral made to the on-call cardiac surgeon. Based on the acute clinical condition and symptoms (frequent dizzy episodes) she was prioritized for out of hours emergency surgery.

On induction, she became bradycardic and hypotensive (peri-arrest) but recovered after placing in a Trendelenburg position with right lateral rotation. The rest of the surgery was uneventful. Median sternotomy, bi-caval cannulation, and cardioplegic arrest was performed. Trans-septal approach was used; a large mass was noted, attached by a 2 cm wide base to the back of the LA between the left pulmonary veins; the mass was excised (Figure 3). No patch was required. The mitral valve was normal. The procedure was completed as per routine.

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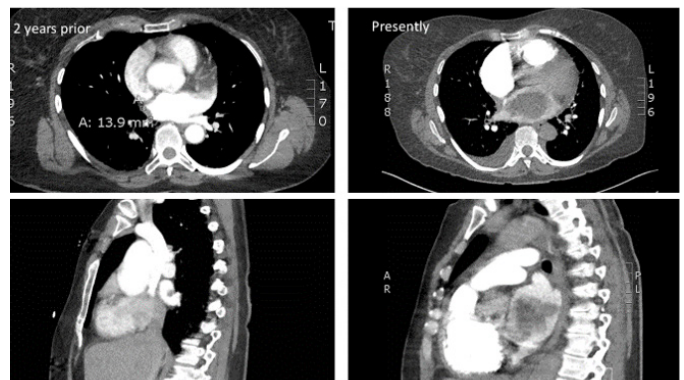


Figure 1: Computed tomography images two years prior and presently: showing the different dimensions.

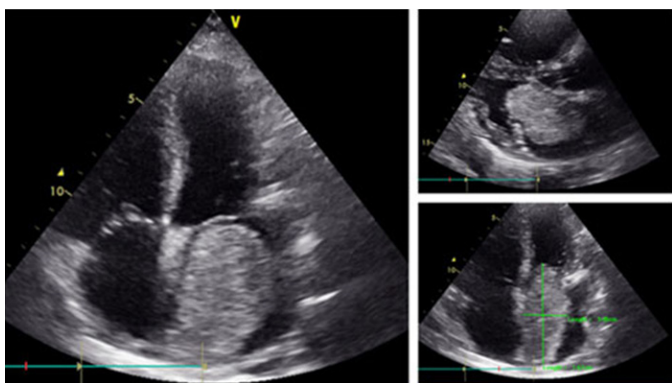


Figure 2: Echocardiogram images of the myxoma.



Figure 3: Excised myxoma.

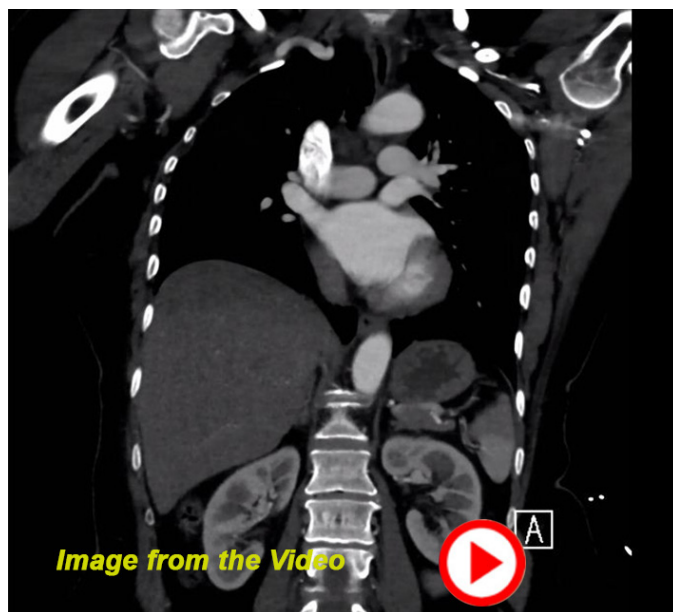
Her post-operative course was uneventful. Histology confirmed a left atrial myxoma. At eight weeks follow-up her breathing had improved and she was back to her normal baseline with excellent exercise tolerance.

DISCUSSION

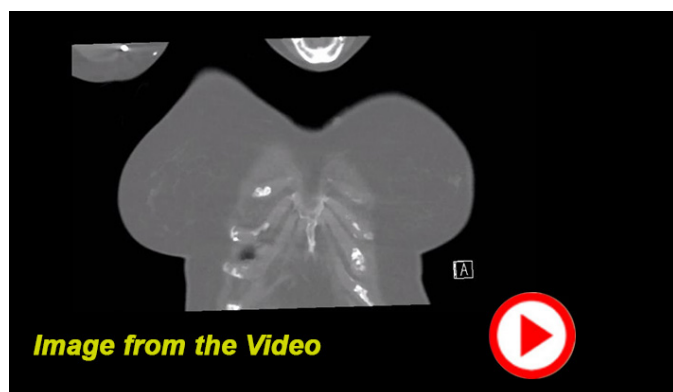
Atrial myxomas are the most common type of benign cardiac tumors. They are mostly diagnosed incidentally. This lady presented with non-specific symptoms. Interestingly, she had several CT scans within the last 10 years because of her trauma events. The latest was two years prior to this admission. None of her previous scan had reported an atrial myxoma. However, reviewing her scan from two years ago in retrospect, a small filling defect in the right lateral aspect of the LA measuring about 10.7 mm could be identified. This atrial mass was not reported at the time (Figure 1).

It is a surprise to find such a large myxoma which occupied the entire left atrium, plunging into the left ventricle develop in less than two years.

Though the growth rate of atrial myxomas is not known, such a rapid growth from 1.07 cm to 7.67 cm within two years is astonishing. Several studies have reported different growth rate of myxomas. A case report by Ullah et al. in 2005 from St Thomas Hospital, London estimated a cross-sectional growth rate of 0.2 cm²/year



Video 1: CT video showing the small left atrial mass in a previous CT for an unrelated diagnosis about two years prior.



Video 2: CT video showing the large left atrial mass which has grown to a large remarkable size within two years.

Videos URL: <http://www.ijcasereportsandimages.com/archive/article-full-text/101201Z01BO2021>

Access Videos
on other devices



and width of 0.05 cm/year [1]. Karloff et al. reported a growth rate of 1.36 cm × 0.3 cm/month [2], while Walpot et al. published a case report of a rapidly growing myxoma with a growth rate of 0.49 cm/month [3]. In this index case, this mass has grown to about 6 × 7.6 cm in just over 2 years, which makes the growth rate about 0.32 cm/month. Reviewing the recent literature there are several papers suggesting the growth rate can be much quicker

than this paper suggests [3–5]. Unfortunately, there are no known accurate methods, features or immunological markers that can predict the growth of these tumors. Most myxomas are excised at first presentation and there are no randomized studies comparing the best treatment approach for incidental asymptomatic small calcified myxomas; if either watchful waiting or urgent surgical intervention is preferable. As it stands aggressive surgical treatment is the preferred treatment in suitable patients.

CONCLUSION

The growth rate of the myxoma is not well established and varies in the literature from 0.05 cm per year to 0.5 cm a year. In our case the growth rate was around 0.3 cm per month retrospectively. The histological markers, or radiological features predicting the growth speed remain unknown and may need further studies.

Keywords: Atrial myxomas, Growth rate, Cardiac tumors

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REFERENCES

1. Ullah W, McGovern R. Natural history of an atrial myxoma. Age Ageing 2005;34(2):186–8.
2. Karlof E, Salzberg SP, Anyanwu AC, Steinbock B, Filsoufi F. How fast does an atrial myxoma grow? Ann Thorac Surg 2006;82(4):1510–2.
3. Walpot J, Shivalkar B, Rodrigus I, Pasteuning WH, Hokken R. Atrial myxomas grow faster than we think. Echocardiography 2010;27(10): E128–31.
4. Lane GE, Kapples EJ, Thompson RC, Grinton SF, Finck SJ. Quiescent left atrial myxoma. Am Heart J 1994;127(6):1629–31.
5. Valenta KTS, Sam SS, Burns EA, Ni N. The 33 months progression of an atrial myxoma. Int J Case Rep Images 2016;7(9):596–8.

Author Contributions

Benjamin Omoregbee – Conception of the work, Design of the work, Acquisition of data, Analysis of data,

Interpretation of data, Drafting the work, Revising the work critically for important intellectual content, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ismail Sooltan – Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Conflict of Interest

Authors declare no conflict of interest.

Data Availability

All relevant data are within the paper and its Supporting Information files.

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