

Giant intrapericardial left atrial appendage aneurysm

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Patient: 9 years, male

Clinical History:

A 9-year-old child presented with gradually progressive chest pain and dyspnoea of 6 weeks duration.

Imaging Findings:

We report a case of a 9-year-old child with a giant congenital intra-pericardial aneurysm of the left atrial appendage containing a large thrombus. He presented with gradually progressive chest pain and dyspnoea. Chest radiograph revealed mild cardiomegaly with an abnormal left sided cardiac contour. Echocardiography revealed a partially thrombosed sac adjacent to the left ventricle. Colour flow mapping confirmed its continuity with the left atrium. Cardiac MR examination was carried out for better delineation of the lesion. Coronal and axial T2W-steady state free precision MR images through the atrium demonstrated a large discrete sac lateral to the left atrium and left ventricle which was communicating with the left atrium suggesting aneurysmal dilatation of the left atrial appendage. Large low signal intensity thrombus was seen within the sac.

Discussion:

Congenital aneurysm of the left atrium appendage is a very rare cardiac anomaly with very few reports in the literature especially pertaining to its imaging findings. Left atrial appendage aneurysm (LAAA) is classified into intrapericardial and extrapericardial aneurysm. The extrapericardial variety is typically associated with a congenital pericardial defect, while an intrapericardial aneurysm is contained within an intact pericardium. Although the exact aetiology is not known, they are believed to be a result of congenital dysplasia of the muscoli pectinati and of the left atrial muscle bundles. This muscular dysplasia is believed to impair contraction of the atrial appendage during atrial systole. Stasis of blood in the aneurysm sac can lead to intraluminal thrombus formation which may embolise systemically. LAAA can present with a wide range of clinical symptoms ranging from a totally asymptomatic patient to sudden death secondary to systemic embolism. Infrequently, patients may also present with arrhythmias, chest pain, progressive dyspnoea or stroke due to systemic embolism. An abnormal cardiac silhouette on chest radiograph may be the only finding at presentation. Echocardiography is usually diagnostic in the majority of patients. Delineation of the aneurysm is relatively better with transoesophageal echocardiogram than with transthoracic echocardiography. The communication of the aneurysm with the left atrium or left atrial appendage is seen well on an echocardiogram. Multislice CT with ECG gating provides much higher spatial resolution as compared to cardiac MR examination. It provides detailed anatomic depiction of LAAA and surrounding cardiac structures. The spatial relationship of the aneurysm to the left atrium and left ventricle can be well established on CT images. Left ventricular anterolateral wall compression by the aneurysm is also well seen with CT study. Thrombosis of LAAA is suggested by a nonenhancing filling defect within the sac. Cardiac MRI using dark and bright blood

techniques can also provide vital information about the size and shape of LAAA without the usage of iodinated contrast material or exposure to ionising radiation. It is useful in outlining the relations of LAAA to the surrounding structures especially with the use of coronal images. Cardiac catheterisation is reserved for patients with inconclusive echocardiography and CT or MRI. Surgical resection is considered the therapy of choice.

Differential Diagnosis List: Giant intrapericardial left atrial appendage aneurysm

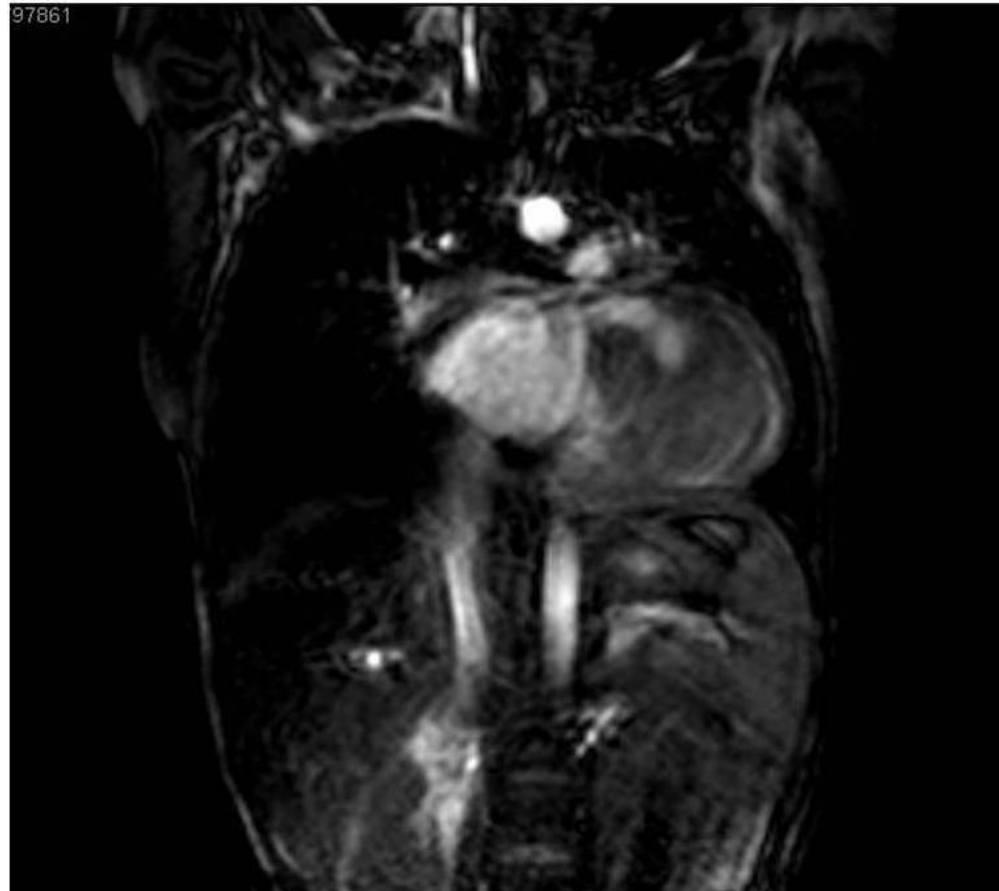
Final Diagnosis: Giant intrapericardial left atrial appendage aneurysm

References:

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Figure 1

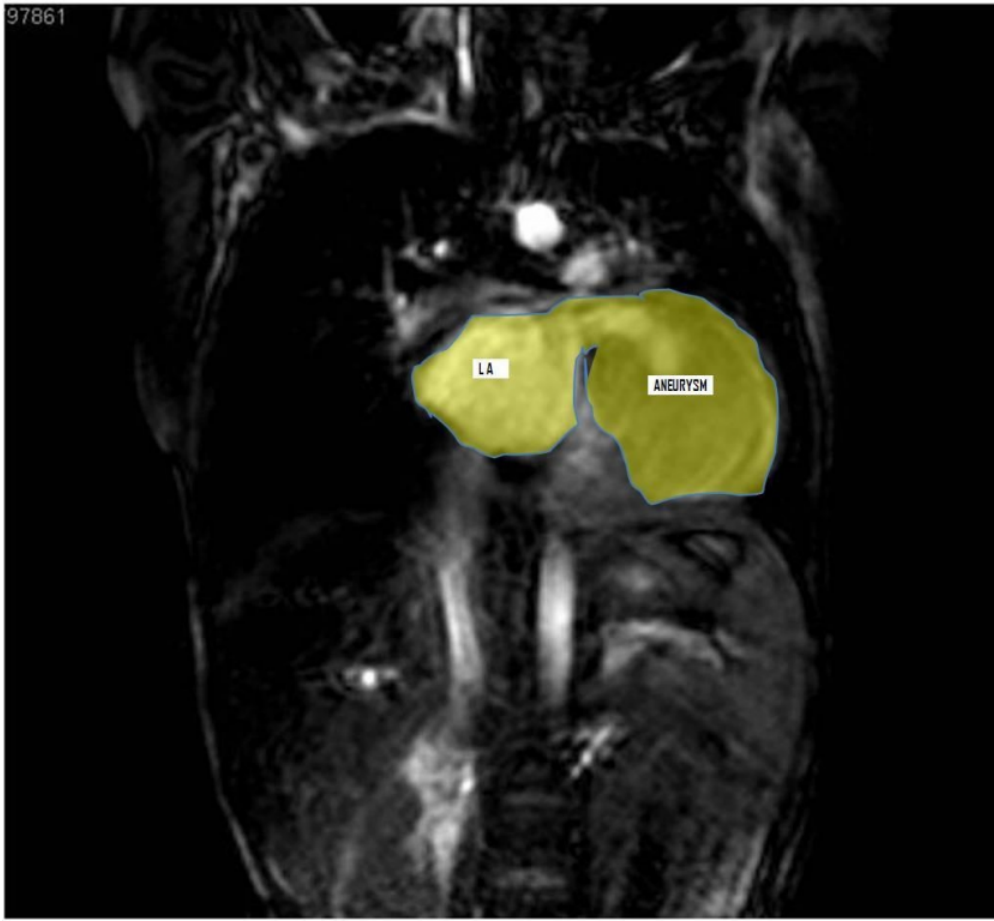
a



Description: Coronal T2W-steady state free precision image through the atrium shows a large discrete sac lateral to the left atrium communicating with the left atrium. Large low signal intensity thrombus can be seen within the sac. **Origin:**

b

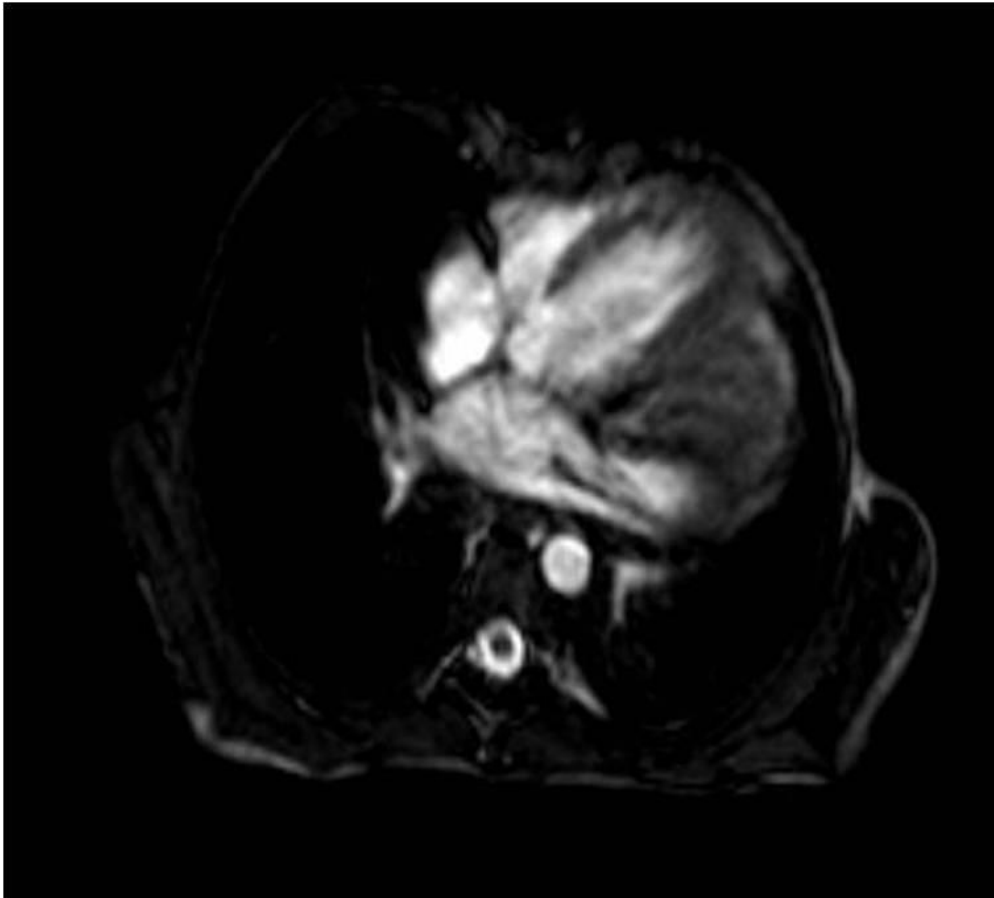
97861



Description: The shaded area represents the large discrete sac lateral to the left atrium communicating with the left atrium. **Origin:**

Figure 2

a



Description: Axial T2W-steady state free precision image through the atrium shows a large discrete sac lateral to the left atrium and left ventricle. It is seen communicating with the left atrium. Intralesional thrombus can be seen within it. **Origin:**

b

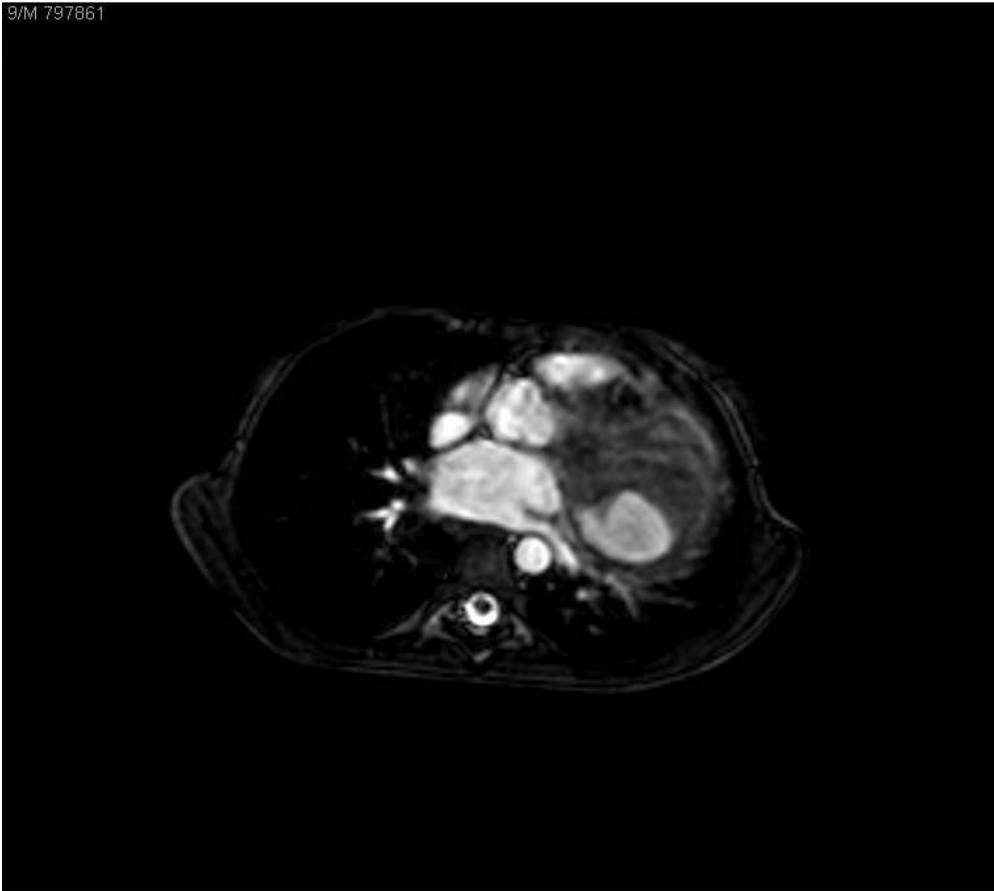


Description: The shaded area represents the large aneurysm lateral to the left atrium communicating with the left atrium. **Origin:**

Figure 3

a

9/M 797861

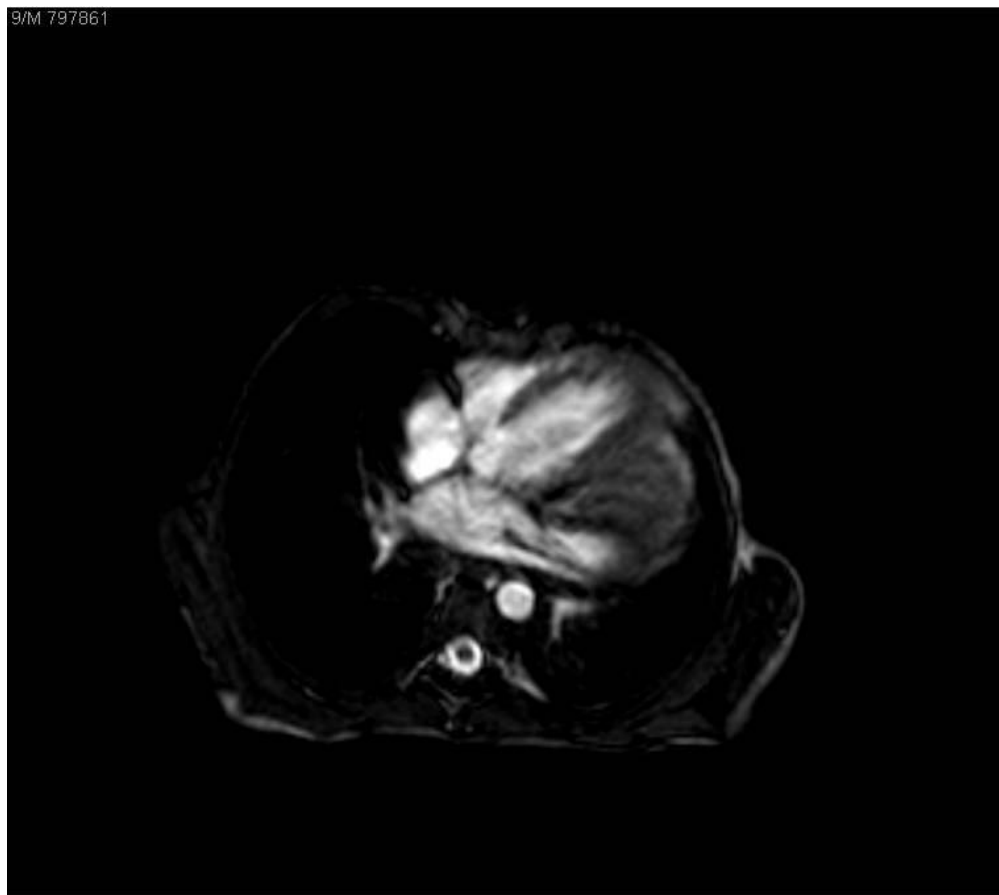


Description: A large partially thrombosed aneurysm can be seen along the left atrium on the left side.

Origin:

b

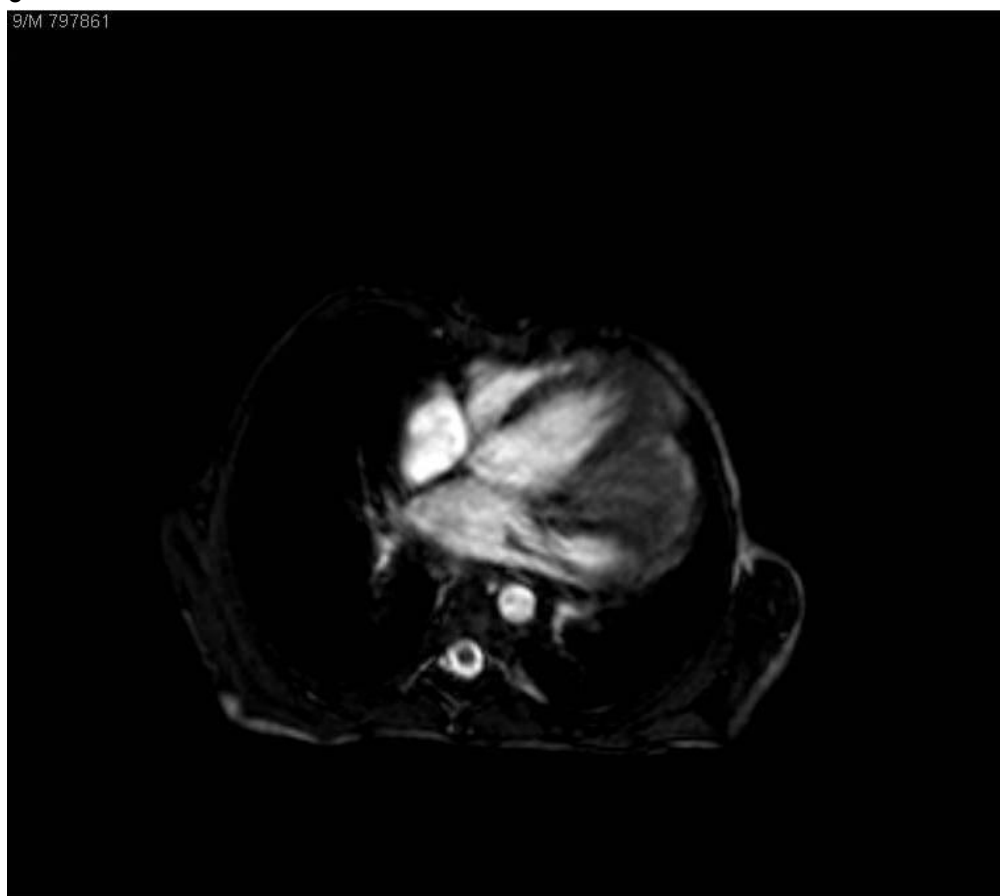
9/M 797861



Description: It is communicating with the left atrium. **Origin:**

C

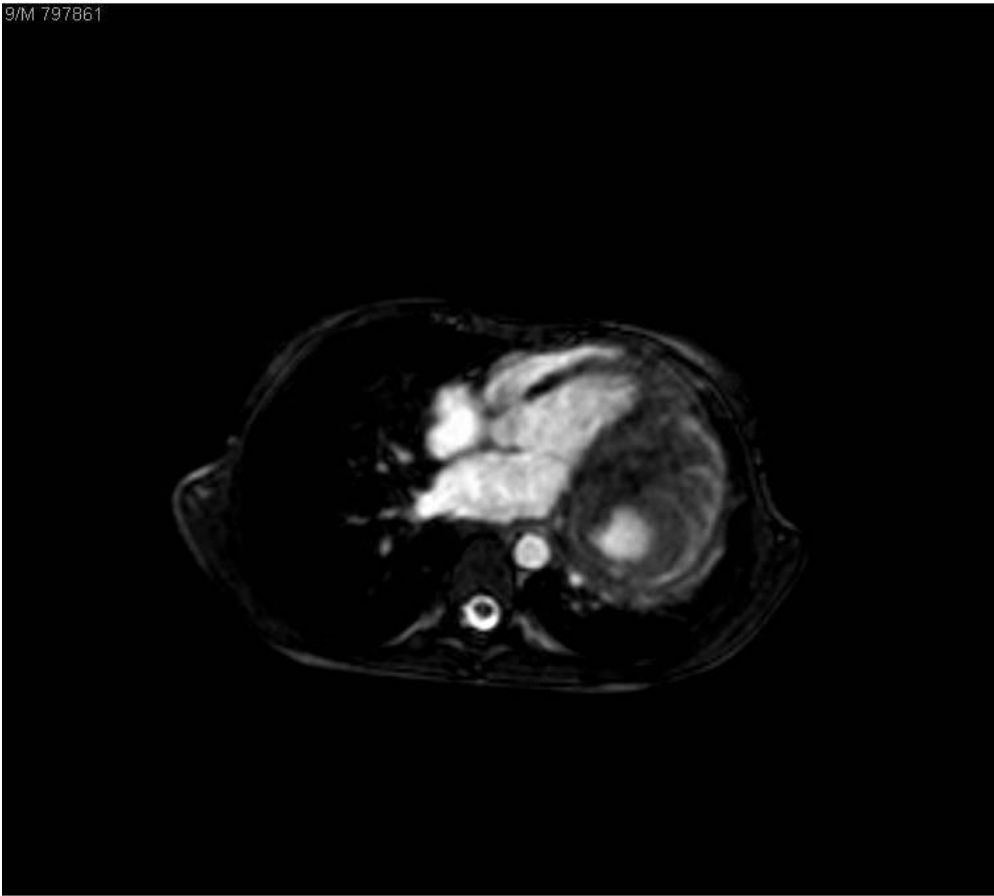
9/M 797861



Description: It is communicating with the left atrium. **Origin:**

d

9/M 797861



Description: It is indenting both the left atrium as well as the left ventricle. **Origin:**

e

9/M 797861



Description: It is indenting both the left atrium as well as the left ventricle. **Origin:**

Figure 4

a

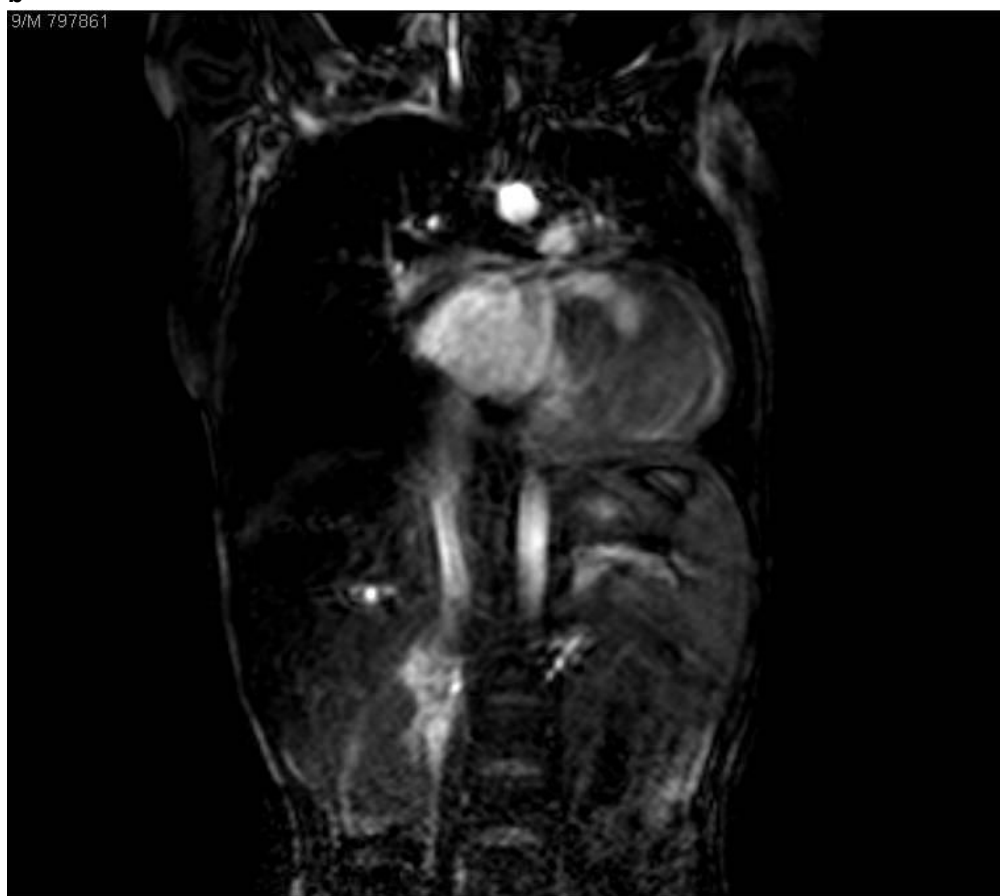
9/M 797861



Description: Thrombosed aneurysm is seen along the left cardiac border. **Origin:**

b

9/M 797861



Description: It is communicating with the left atrium. **Origin:**

C

9/M 797861



Description: A large intravesicular thrombus is seen. **Origin:**

d

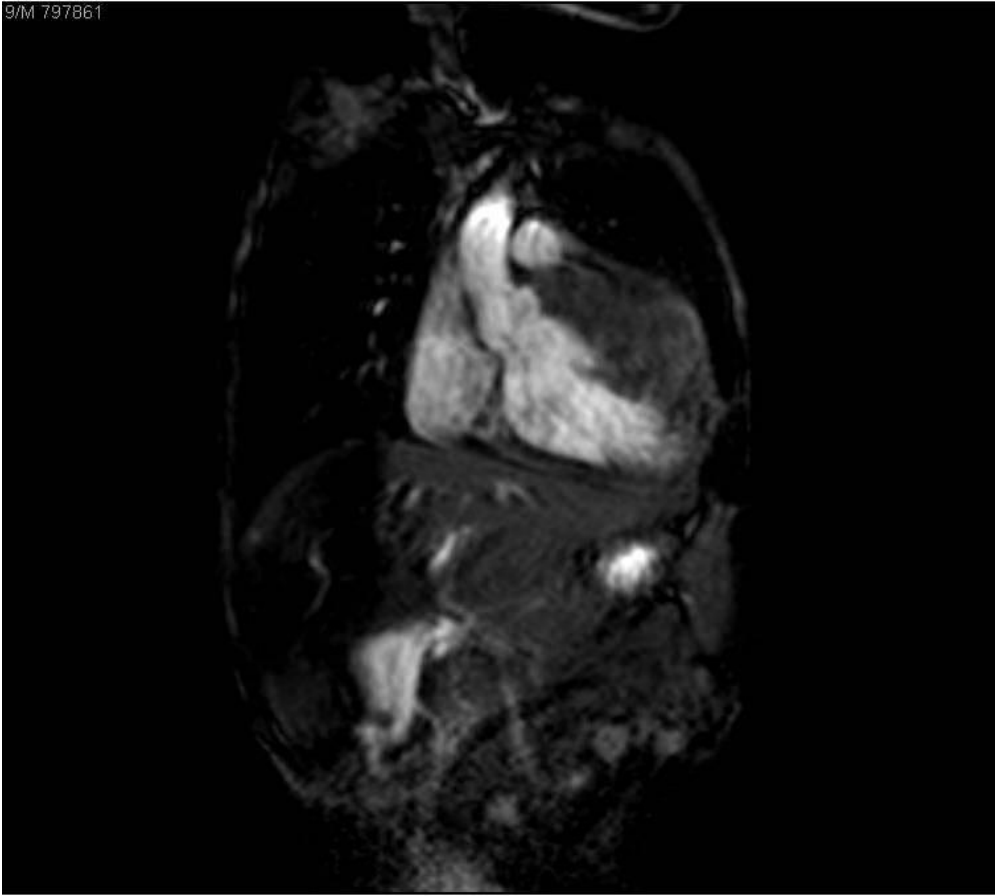
9/M 797861



Description: It is indenting both the left atrium as well as the left ventricle. **Origin:**

e

9/M 797861



Description: It is indenting both the left atrium as well as the left ventricle. **Origin:**