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ASYMPTOMATIC MEDIASTINAL MASS – VENOUS ANEURYSM OF THE LEFT INNOMINATE VEIN – BE IT A DIFFERENTIAL

Medicine

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ABSTRACT

Venous aneurysms in the mediastinum are very rare and may present with pressure symptoms or may be incidentally detected. Only few reports of thoracic venous aneurysms are reported in the literature. We describe an unusual case of an asymptomatic mediastinal venous aneurysm of the left innominate vein. Our patient is a 30 years old female presented to the medicine department with anemia and constitutional symptoms. A mediastinal mass was detected on the initial chest radiograph. CT thorax with contrast showed a left innominate vein aneurysm with partial thrombus in the wall of the aneurysm in the anterior mediastinum for which the patient was operated. We would like to emphasize that vascular lesions including aneurysms and malformations should be kept as differentials of the anterior mediastinal mass and contrast enhanced CT chest must be performed before contemplating image guided biopsies, as this may lead to catastrophic consequences otherwise.

KEYWORDS

Anterior mediastinal mass, venous aneurysm, contrast CT chest

INTRODUCTION

Anterior mediastinal tumors are one of the most common conditions which frequently present in clinical practice in varied ways. The borders of the anterior mediastinum includes sternum anteriorly and the brachiocephalic vessels and ascending aorta posteriorly (1).

The anterior mediastinum extends from thoracic inlet to diaphragm (1). The most common differentials for the anterior mediastinal tumors are teratoma, thymoma, thyroid tumors and lymphoma.

Venous aneurysms or vascular malformation are rare conditions which usually do not commonly show up in the differentials of mediastinal lesions. Our patient is a 30 years old female diagnosed to have partially thrombosed left innominate vein aneurysm.

We would like to suggest having these vascular lesions as differentials in the mediastinal tumors and also like to empasize the role of contrast CT before image guided biopsy of the mediastinal tumors.

Case report:

A 30-yrs-old female presented with non-specific constitutional symptoms to our medicine outpatient department.

Clinical examination was normal. Blood examinations were within normal limits except for mild anemia. A chest radiograph taken as a part of evaluation showed a mass lesion possibly located in the anterior mediastinum (Fig 1).

Non contrast CT scan of the thorax was initially performed which demonstrated a well-defined homogenous soft tissue attenuation mass in the anterior mediastinum, predominantly on the left side. There were tiny foci of calcification within the lesion (Fig 1).

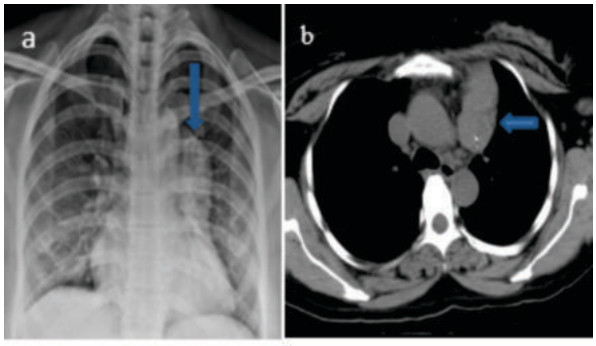

Figure 1: Chest Radiograph (a) shows an anterior mediastinal mass (arrow). Non contrast CT axial sections (b) show soft tissue attenuation mass (arrow) in the anterior mediastinum with calcific focus.

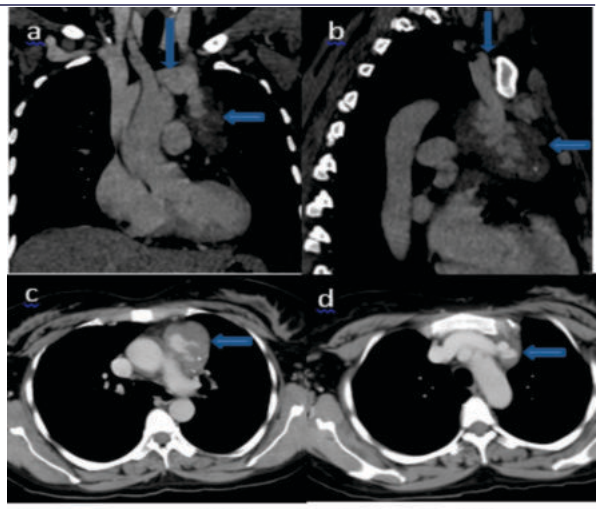

Figure 2: Coronal (a), sagittal (b) and axial images (c,d) of the contrast CT show the partially thrombosed saccular aneurysm (arrows) communicating with the left innominate vein.

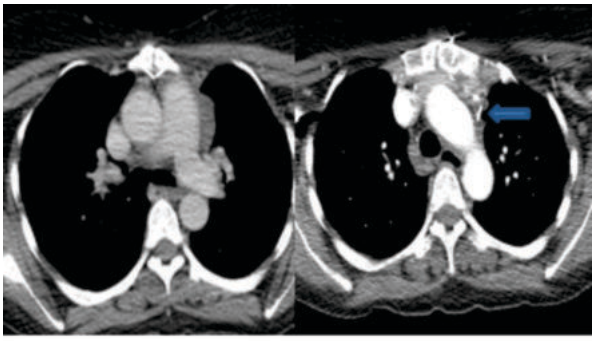

Figure 3: Post-operative follow up CT after one year shows no residual aneurysm. Surgical clips are noted (arrow)

DISCUSSION:

Anterior mediastinal masses are one of the common entities in clinical practice presenting in varied manner. The common differentials for anterior mediastinal tumors include teratoma, thymoma, thyroid tumors and lymphoma. Venous aneurysms are rare and only very few reports are available in the literature (2). They are usually asymptomatic but sometimes can present as a rapidly enlarging mass (2,3,4). Two different types of aneurysm documented in the literature are saccular and fusiform, the former being uncommon (5).

The etiopathogenesis of these venous aneurysms is not clear. These aneurysms may be due to congenital defect or acquired secondary to infection or trauma or autoimmune etiology. Congenital and mycotic aneurysms have been described in the literature (6,7). Our patient did not have any trauma or evidence of autoimmune process. This was thought to be congenital in nature.

The imaging modality of choice for venous aneurysms is contrast enhanced CT venogram which would show the communication between the vein and the aneurysm clearly. However there are misdiagnosed cases of thymoma on contrast CT and sometimes dynamic contrast enhanced MRI might add value (2). We could clearly see the contrast pooling within the aneurysm on CT scan in our patient and a communication with the left innominate vein was well demonstrated.

We discussed the imaging findings with our surgeons and interventional radiologists to decide on further management. All the possible treatment options including surgical removal, minimally invasive endovascular techniques like covered stent placement to isolate the aneurysm or observation were discussed.

Recent literatures have described using uncovered stents and stent assisted coiling or thrombin injection for acquired brachiocephalic pseudoaneurysms (8,9, 10).

Surgery has its own risks and benefits, however not treating a large central venous aneurysm or usage of any external hardware like a stent could potentially result in long term complications especially in younger patients. If left alone, these aneurysms can spontaneous rupture and can predispose to thrombo embolic phenomenon.

We explained the possible benefits and disadvantages of all the management options to the patient. After understanding the alternate options available and the long term benefits, the patient preferred to undergo sternotomy, resection of the aneurysm and reconstruction of the vein.

The patient underwent aneurysmectomy followed by reconstruction of the left innominate vein. The patient's postoperative course was uneventful.

CONCLUSION:

Mediastinal venous aneurysms are rare, and are either asymptomatic, or may present with symptoms related to the mass effect on adjacent mediastinal structures. Rare complications of these aneurysms include spontaneous rupture and thrombo embolic phenomenon. Venous aneurysm should be kept in the differential diagnosis of asymptomatic mediastinal mass. Dynamic dual phase Contrast enhanced CT will differentiate vascular lesions from other masses and should be performed before contemplating image guided biopsy. Adequate information on the extent of the aneurysm and communication with the parent vein will help in planning treatment options.

Declaration
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Ethical approval: Not required

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