

Chronic Pseudoaneurysm of the Right Subclavian Artery: A Rare Case Presentation and Review

Rekha Tanwar¹, Shishir Chumber², Kavita Vani³

Abstract: This article presents the case of a 64 year old female diagnosed with a chronic pseudoaneurysm of the right subclavian artery, caused by a nonsignificant blunt trauma 20 years prior. The patient reported shortness of breath and right hand weakness, accompanied by a slowly enlarging mass in the right supraclavicular fossa. Clinical and radiological investigations, including contrast enhanced CT, confirmed the vascular nature of the mass, revealing a large pseudoaneurysm in the right subclavian artery. A detailed discussion of subclavian artery pseudoaneurysms, their causes, diagnostic methods, and treatment options, including surgical resection and stent grafting, is provided. The case emphasizes the importance of early detection and intervention in preventing life threatening complications such as rupture or thrombosis.

Keywords: pseudoaneurysm, subclavian artery, trauma, mediastinal mass, surgical treatment

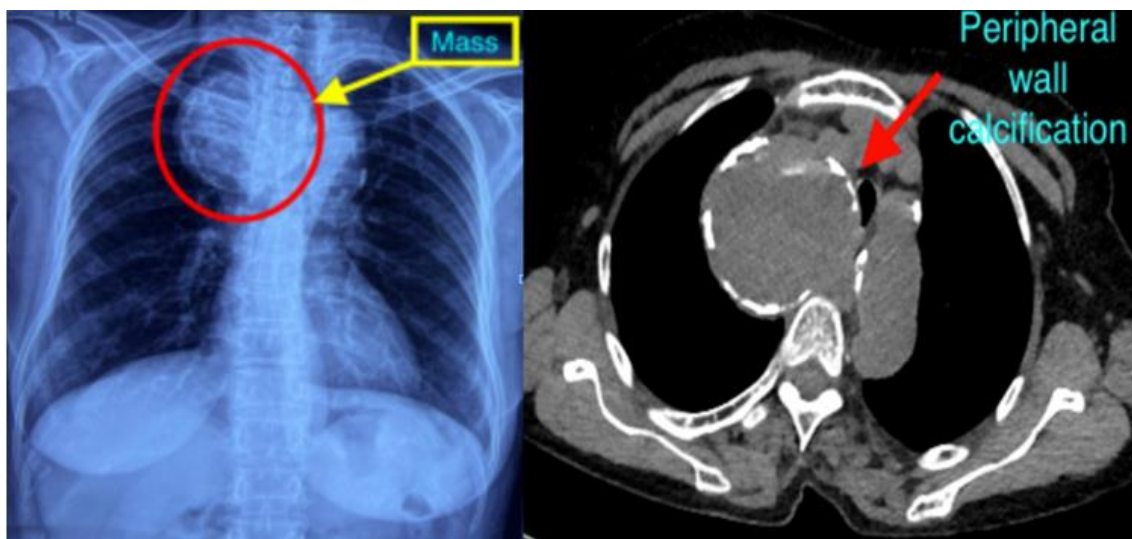
1. Introduction

We present a case of a chronic pseudoaneurysm of the right subclavian artery caused by non significant blunt trauma that occurred 20 years earlier. The vascular nature of the lesion was confirmed on CTA.

2. Case Presentation

A 64 - year old female reported shortness of breath and weakness of the right hand over the last few months. On examination there was a tender mass in the right supraclavicular fossa. When specifically questioned, the patient stated that the mass had increased in size slowly, over several years. Radial pulse was present and equal on both sides. Prominent superficial veins were noted. There were no signs to suggest brachial palsy. The patient gave a history of blunt trauma 20 years earlier to the site of the current mass

however the patient had never considered that the trauma had been significant. She had not taken any treatment for the trauma. At the current presentation, she was suspected to have a lung mass for which she was evaluated. The plain radiograph of the chest showed a well - circumscribed right - sided paratracheal, superior mediastinal mass with peripheral ring - like calcifications causing compression and deviation of trachea. There was no evidence of any old or new fracture. The plain and contrast - enhanced CT of the chest revealed a large (6.6 x 6.5cm) well defined, round, peripherally calcified soft tissue mass in the superior mediastinum, in the anatomic region of the right subclavian artery. The dependent part of the lesion showed homogeneous enhancement, isodense to arteries with direct communication with the proximal right subclavian artery. The non dependent part was not enhancing and hypodense, suggestive of thrombus. These findings confirmed the diagnosis of pseudoaneurysm of the right subclavian artery. This was also supported by past history of blunt trauma to the chest (Fig.).



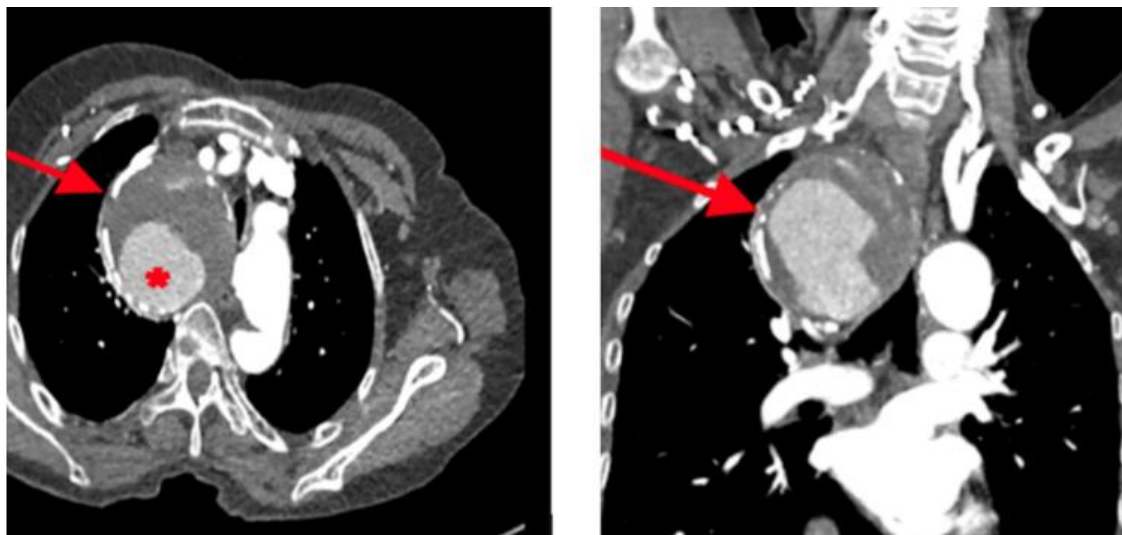


Figure: Chest x - ray PA view, NCCT chest axial section. Axial & coronal sections of CT angiography.

3. Discussion

Subclavian artery aneurysms are uncommon when compared to peripheral artery aneurysms such as those arising from femoral or popliteal arteries [1, 3]. Pseudoaneurysms are usually due to blunt or penetrating trauma [2, 3]. True aneurysms are usually due to atherosclerosis [1]. Other, less frequent causes are connective tissue disorders, infection, cystic medial degeneration, fibromuscular disease, and trauma [1]. The majority of post - traumatic subclavian artery aneurysms are pseudoaneurysms. A large proportion of subclavian artery aneurysms are asymptomatic for a variable period of time varying from weeks to several years after the initial trauma [2, 4]. However, it has been reported that about half of the patients with subclavian artery aneurysms are symptomatic at the time of clinical presentation. The complaints may include neurological or ischemic symptoms of the upper extremities originating from emboli or hypoperfusion [1, 4, 5]. Pain, paresthesias, dysphagia, dysphonia, dyspnea, and Horner's syndrome from local compression of adjacent structures may occur [4, 5]. Presence of an abnormal mass in the supraclavicular region may suggest the correct diagnosis.

Radiographic findings consist of a superior mediastinal mass on the plain chest X - ray. Contrast - enhanced CT plays an important role in the diagnosis of a mediastinal mass by demonstrating origin of the mass/ aneurysm from brachiocephalic artery. CT scans demonstrate the size and extent of the aneurysm as well as the presence and extent of thrombus. In the present case, CT showed the vascular nature of the mediastinal mass, which originated in the right subclavian artery. The non dependent part of the lesion was not

enhancing due to thrombus formation. Angiography precisely delineates the location and collateral circulation, gives information on anomalous vasculature and is important in planning subsequent surgical interventions. The improvements in MR angiography by using breath - hold sequences in conjunction with specialized coils and optimized contrast timing has resulted in excellent image quality. However, the precise clinical role of aortic arch vessel MR in the management of brachiocephalic artery aneurysms is not

yet known. Conventional catheter angiography remains the gold standard [6].

Complications such as rupture, thrombosis, and distal embolization are rare, however potentially fatal complications of subclavian artery aneurysms are known to occur. The treatment of choice are surgical resection and graft replacement to restore vascular continuity [7]. In some selected patients, an alternative to surgery is percutaneously inserted endoluminal stent grafts, which have a high rate of success [8].

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