



## **An Atypical Cause of Shoulder Pain** **Omuz Ağrısının Atipik Bir Nedeni**

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### **Abstract**

Shoulder pain is a very frequently encountered clinical situation, and it constitutes 16% of all musculoskeletal system complaints. Various underlying causes that may or may not be associated with the structures of the shoulder joint may lead to serious shoulder pain. Here, in this article, we are presenting an atypical case of shoulder pain. A 52-year-old patient whose sole complaint was shoulder pain and who was subsequently diagnosed with a left subclavian artery aneurysm is presented. The computed tomographic (CT) and CT-angiographic (CTA) examinations are presented in this article.

**Key Words:** Shoulder pain, subclavian artery aneurysm, computed tomography, CT angiography

### **Özet**

Omuz ağrısı çok sık karşılaşılan bir şikayet olup, tüm kas iskelet sistemi yakınmalarının %16'sını oluşturmaktadır. Omuz eklemi ilgilendiren yapılarla ve omuz eklemi dışı organlara bağlı birçok neden omuz ağrısına neden olabilmektedir. Bu yazıda omuz ağrısının atipik nedeni olan bir olguyu sunduk. Tek semptomu omuz ağrısı olan, sol subklavian arter anevrizması saptanan 52 yaşındaki hasta, Bilgisayarlı Tomografi (BT) ve BT- anjiyografi tetkikleri ile sunuldu.

**Anahtar Kelimeler:** Omuz ağrısı, subklavian arter anevrizması, bilgisayarlı tomografi, BT anjiyografi

### **Introduction**

Shoulder pain is a very frequently encountered situation in daily clinical practice, and it constitutes 16% of all musculoskeletal system complaints (1). Various causes, associated with either the shoulder joint or extra-articular structures, may lead to the clinical outcome of this complaint (2,3). Bursitis, tendinitis, rotator cuff tears, adhesive capsulitis, impingement syndrome, avascular necrosis, glenohumeral osteoarthritis, suprascapular nerve injury, brachial plexus neuritis, neuropathic shoulder syndrome due to syringomyelia, upper mediastinal tumors, and aneurysms may be listed among the very many causes of shoulder pain (1). Malignant processes may give rise to shoulder pain due to infiltration of the lower truncus of the brachial plexus (4). In addition to these causative factors, aneurysms located in

the upper mediastinum may lead to shoulder pain by means of pressure application on the lower truncus of the brachial plexus (5,6). Different and interesting cases of shoulder pain are being presented in this article. A 52-year-old patient whose sole complaint was shoulder pain and who was subsequently diagnosed with a left subclavian artery aneurysm is presented.

### **Case Report**

A 52-year-old man applied with complaints of the left shoulder and arm pain. The motion range of the left shoulder was found to be within normal limits. The Hawkins and Neer provocative impingement tests were negative. The AP shoulder radiogram was evaluated as normal. Because the physical examination findings did not suggest any shoulder pathology, diagnostic

priority was given to the routine laboratory tests and the PA-chest roentgenogram. Serum biochemical values did not reveal any abnormality. Because the PA-chest roentgenogram disclosed a widening of the upper mediastinum, a chest computed tomographic (CT) examination was done. Contrast-enhanced CT (CECT) of the thorax revealed an aneurysmatic enlargement of the left subclavian artery. Later, a CT-angiographic (CTA) examination was performed with a 2x64 multidetector CT system, and the diameter of the left subclavian artery was measured as 5.1 cm on axial images (Figure 1). Coronal reformat images clearly demonstrated a fusiform aneurysm that was located in the left lateral aspect of the trachea. Sagittal reformat images, on the other hand, showed that the aneurysm extended upwards to the C7 level (Figure 2).

## Discussion

Because of the wide range of neighboring organs and tissues, the joint itself and these surrounding structures must be evaluated in the diagnostic efforts to illuminate the causative factors of the symptomatology of shoulder pain. A proper physical examination and evaluation of the history of the clinical situation are of utmost importance in the diagnosis of various pathological conditions arising from structures outside the shoulder joint and causing shoulder pain. Besides the biochemical routines, an AP-shoulder roentgenogram is essential in the diagnostic work-up. Also, a thoracic CT and/or CTA may be needed in the diagnostic quest for the illumination of possible intrathoracic etiological causes.

Subclavian aneurysms are seen rather rarely; they make only 1% of all peripheral arterial aneurysms (7,8). These aneurysms are classified into two groups according to their etiologies, presentations, and therapeutic strategies: a) intrathoracic and b) extrathoracic. Those aneurysms that affect the intrathoracic portion of the subclavian artery develop mainly due to atherosclerosis, while those affecting the extrathoracic portion of the artery are usually due to trauma and thoracic outlet syndrome (5,7). In a very small portion of aneurysms, the etiologic factor can not be identified. This group of aneurysms is known as congenital aneurysms (9). Our patient had a fusiform aneurysm in the proximal aspect of the left subclavian artery. No calcified plaques were present in the aortic arc, its proximal branches, or the cervical arteries. Thus, this aneurysm was not evaluated as an aneurysm secondary to an atherosclerotic process. A proper etiological situation could not be identified when this aneurysm was questioned in terms of other various etiological factors. But, still, a diagnosis of congenital aneurysm could not be reached, because a certain diagnosis would require a histological basis. Subclavian artery aneurysms are usually asymptomatic pathologies. If a symptom is actually present, the most frequently encountered ones are upper chest and shoulder pain (6-8,10). Due to the closeness of the subclavian artery to the brachial plexus, an aneurysm arising from this artery may lead to motor and sensory symptomatology due to the impingement of the brachial plexus by the aneurysm (11). Impingement of the lower cervical truncus, on the other hand, may lead to the onset

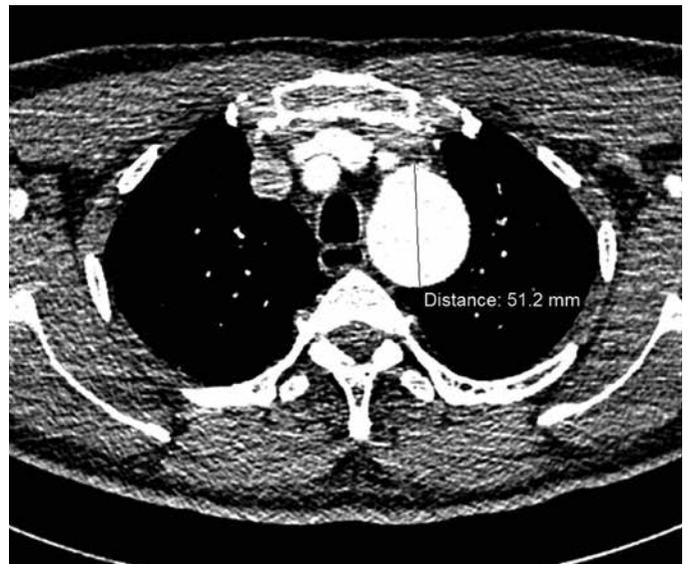


Figure 1. Contrast-enhanced axial CT scan shows aneurysmatic dilatation of the left subclavian artery

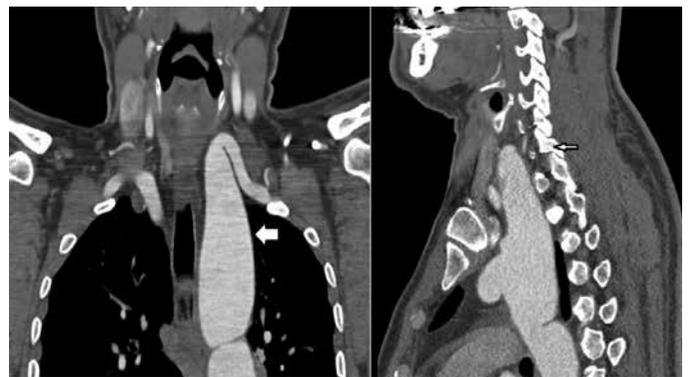


Figure 2. Coronal and sagittal plane reformat images from the CTA study show a fusiform aneurysm in the left subclavian artery (arrow). The aneurysm extends upwards to the C7 level (thin arrow)

of shoulder pain. Because the lesion does not affect the shoulder joint directly, shoulder motion ranges are within normal limits. In our patient, too, motion ranges of the affected left shoulder joint were normal, even though he had pain in this shoulder and the ipsilateral arm.

Shoulder pain may arise as a result of various etiological factors, concerning both the structures constituting the shoulder joint and those that are not associated with the joint at all. In those patients whose physical examinations reveal the possibility of a causative factor outside of the shoulder joint, a PA-chest X-ray is useful in order to evaluate the possible thoracic pathologies that may lead to shoulder pain.

## Conclusion

Patients whose PA-chest films reveal abnormal density should undergo a thoracic CT, and those with an aneurysm must be examined thoroughly by a CTA study.

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