

DIAGNOSTIC CHALLENGE

Answer: Alfred Washington's arm

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The answer is: d) cervical rib with brachial artery thrombosis. Results of the chest x-ray provided our clue (Fig. 1). A Doppler ultrasound study of the right upper limb revealed no flow in the brachial artery distal from the junction of the axillary artery with echogenic material, suggestive of a thrombus, in the brachial artery.

Anticoagulation was commenced with intravenous heparin and the patient ultimately underwent brachial artery embolectomy. During exploration of the neck, the subclavian artery was found to lie in front of the cervical rib. Despite the finding of post-stenotic dilation, there was no thrombus with the artery at that level. The cervical rib was resected. One month after the procedure, the patient was asymptomatic with complete recovery of arm function and brachial pulse; however, his radial pulse remained weak.

Acute ischemic limb in a young person is a rare presentation to the emergency department, yet there is a differential diagnosis that ought to be considered. Peripheral vascular disease is uncommon in young patients, but it can occur in the presence of familial hypercholesterolemia, hypertension and diabetes. Our patient had no other risk fac-

tors for accelerated atherosclerosis other than smoking. Atrial fibrillation may lead to paradoxical arterial embolism when there is a patent foramen ovale; however, our patient was in sinus rhythm at the time of presentation, making this possibility less likely. Finally, hypercoagulable states usually lead to venous thrombosis, but arterial flow can be compromised when fulminating thrombosis leads to excessive limb edema as in the condition of phlegmasia cerulea dolens. Only moderate edema was present and it was primarily in our patient's hand.

Alfred Washington was actually Alfred Washington Adson, who described Adson's maneuver for thoracic outlet syndrome. Thoracic outlet syndrome occurs when there is compression of neurovascular structures in the apex of the hemithorax due to post-traumatic scarring of the scalene muscle or to the presence of a cervical rib. In most cases, the brachial plexus is involved and, therefore, the cardinal symptoms are neurologic. Vascular complications are uncommon and they usually involve the subclavian vein. The rare occurrence of arterial symptoms can be associated with significant long-term morbidity.¹

Hood and colleagues described a series of patients seen over 10 years in a large centre who presented with vascular complications of thoracic outlet syndrome. Of the 3 with acute arterial symptoms, only 2 had cervical ribs; both of these were elderly and their symptoms were precipitated by trauma.²

Nehler and coworkers described a series of 12 patients seen over 6 years in a vascular surgery practice, who had vascular complications associated with bony thoracic outlet abnormalities. Eight patients had cervical ribs and the average duration of symptoms was 7 months before pre-

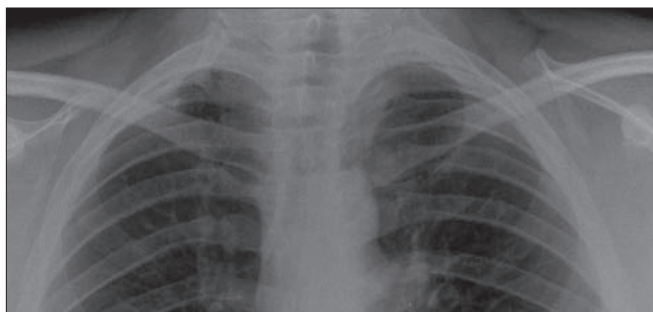


Fig. 1. Results of chest x-ray of right cervical rib.

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Can J Emerg Med 2006;8(5):370-1

sentation. In addition, these investigators found that all subclavian aneurysms had intraluminal thrombus, indicating that chronic and repeated embolization occurred.³

In contrast to the published experience of vascular complications of thoracic outlet syndrome, our patient was young, did not have an identifiable precipitating event, and did not have evidence of chronic arterial embolism and thrombosis. It seems that, that like many clinical entities, thoracic outlet syndrome doesn't always present in the classic manner.

Competing interests: None declared.


Key words: ischaemic upper limb; cervical rib; thoracic outlet syndrome

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