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A painful swollen shoulder

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Abstract

False aneurysms of the axillary artery are rare complications of blunt trauma and dislocation of the shoulder. We present a case of false aneurysm of the axillary artery secondary to traumatic fracture of the humeral neck, which resulted in brachial plexus damage and was initially diagnosed as a neoplasm.

Keywords

Pseudoaneurysm; arteries; injuries; shoulder.

Case report

A 73-year-old schizophrenic woman presented with swelling and induration of the right arm and evidence of brachial plexus lesion. She was anaemic and required transfusion.

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X-ray of the right shoulder revealed a humeral neck fracture. She denied a history of trauma, and the initial clinical impression was that the humeral fracture was pathological with tumoral infiltration of the brachial plexus, and an MRI scan was requested to stage the disease. This showed a low signal lesion in the axilla causing a pulsation artifact, raising the possibility of pulsating blood within the lesion (Fig. 1). A helical contrast-enhanced CT scan confirmed the presence of a large pseudoaneurysm compressing the brachial plexus (Fig. 2).

Because the patient was at high risk surgically, an angiogram was performed with a view to endoluminal management of the aneurysm (Fig. 3). This showed the large pseudoaneurysm compressing the underlying vessel with no distal circulation. The patient was treated with embolization coils inserted selectively into the aneurysm (Fig. 4).

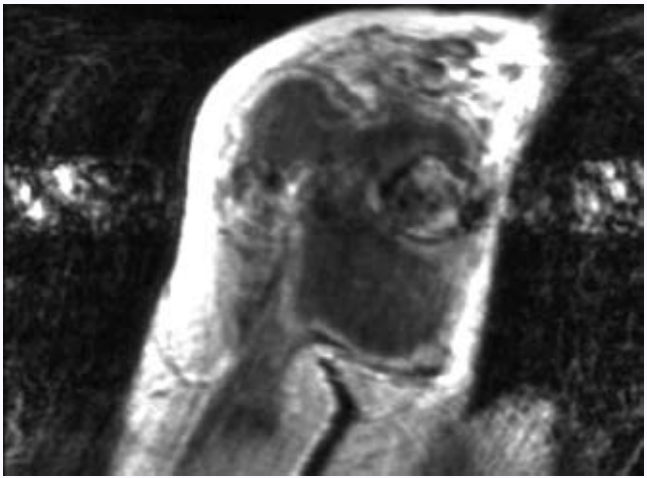

Fig. 1. Coronal MRI scan through the right shoulder showing motion artifact.

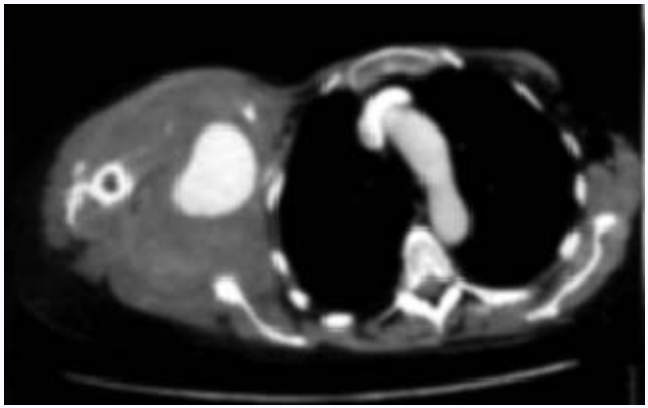

Fig. 2. Contrast-enhanced helical CT through the right axilla showing contrast filling of the false aneurysm lumen.

Following treatment, all pulses were present in the right arm but the paralysis remained.

Diagnosis

Traumatic pseudoaneurysm of the axillary artery complicating humeral head fracture.

Clinical evidence and unusual features

Traumatic pseudoaneurysms of the axillary artery have been described following shoulder dislocation, fracture of the greater tuberosity and penetrating trauma.[1–4] Clinical diagnosis is often difficult because muscle spasm prevents adequate examination of the shoulder, and distal pulses may be preserved because of good collateral circulation.

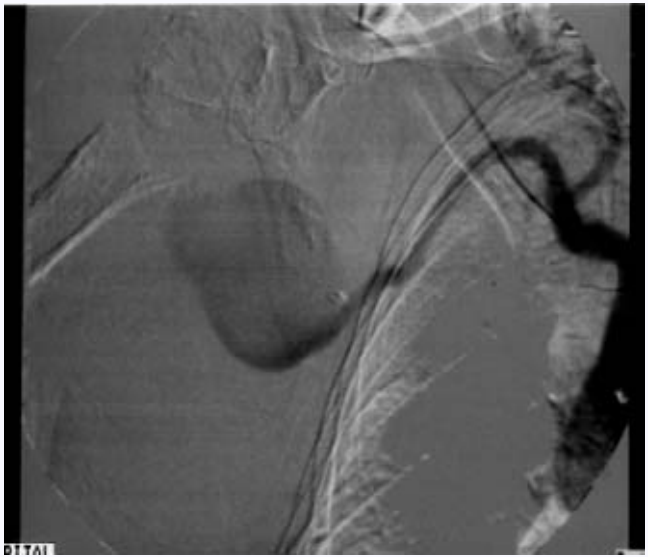

Fig. 3. Demonstration of the false aneurysm at angiography.

There is often a delay of weeks to years after the trauma before the pseudoaneurysm presents[3,4] so the relevant history may be overlooked and the clinical index of suspicion for this diagnosis may be low.[4] Differentiation from a tumour is very important, and misinterpretation of CT images has led to biopsy complicated by haemorrhage and death.[3] The close relationship of the axillary artery to the brachial plexus is responsible for the high incidence of brachial plexus lesions associated with compression by the false aneurysm. This carries a bad prognosis despite operative decompression,[5] but is likely to be better if early diagnosis leads to prompt treatment.

Many imaging modalities have been suggested for making the diagnosis of

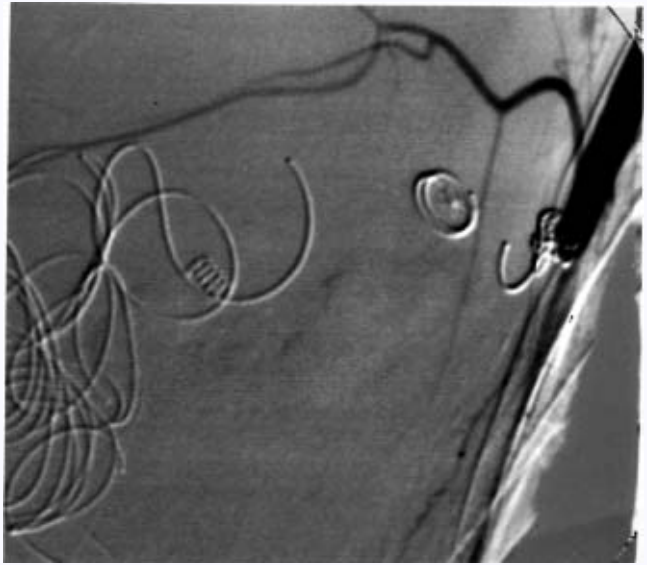

Fig. 4. The false aneurysm lumen is obliterated following coil embolization.

pseudoaneurysm of the subclavian and axillary arteries, including CT,[1,6] ultrasound with Doppler,[2,7] MRI,[1,7] and angiography.[1,2,4,6,7] In this case, MRI was requested because of the suspicion of a soft tissue tumour. Though not diagnostic, the MRI appearance and the motion artifact suggested the correct diagnosis, which was elegantly demonstrated by contrast-enhanced helical CT and Doppler ultrasound.

Treatment of these pseudoaneurysms has traditionally relied on surgery, usually with an autologous vein graft.[10] However, in high-risk patients, endovascular treatment is an option. Subclavian false aneurysms have been treated with stent grafts,[8,9] endoluminal or percutaneous placement of coils and balloons.[10] Treatment with a stent graft has the

advantage that it both occludes the neck of the false aneurysm and treats the narrowing caused by pressure from the false aneurysm. However, the mobility of the artery puts great mechanical strain on the stent framework, with a high risk of late stent fracture or disruption.

Lesson

False aneurysm of the axillary artery is an important late complication of proximal fracture of the humerus that may be misdiagnosed. A high index of clinical and radiological suspicion is important to direct correct management.

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