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Unusual lesions mimicking impingement syndrome in the shoulder joint - Think medially

Rohit Singh*, Akshay Malhotra, Gillian Cribb, Paul Cool, Stuart Hay

The Robert Jones Agnes Hunt Oswestry Orthopaedic Hospital Shropshire, Shropshire, United Kingdom

HIGHLIGHTS

- Impingement syndrome is defined as impingement of the rotator cuff by the anterior one-third of the acromion, 1.
- Iatrogenic causes such as sutures, can cause similar symptoms.
- Symptoms and signs of impingement may be present can originate outside the sub-acromial space.
- MRI scan remains an important imaging tool.

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ABSTRACT

Impingement syndrome is usually caused by irritation of the rotator cuff within the sub acromial space and this includes the coraco-acromial arch (Acromion and Coraco-acromial ligament), the acromio-clavicular joint and occasionally the coracoid. Iatrogenic causes such as sutures, pins, plates or wires left from previous surgery can cause similar symptoms. We present a series of four cases mimicking "classical" impingement symptoms/signs in which the causal pathology was identified outside the sub-acromial space. Magnetic Resonance Imaging (MRI) showed lesions that were present in the supra-spinatus fossa but were causing pressure effects on the sub-acromial space, namely - a ganglion cyst in one case, lipomata in two other cases, and a glomus tumour. A ganglion cyst and glomus tumour mimicking impingement syndrome is a rare reported case to our knowledge.

These are unusual causes that should be considered when investigating classical impingement syndrome and particularly those who may have failed to respond to decompression surgery. They highlight the potential value of looking beyond the sub-acromial space for causal lesions and in these cases, at a time when limited ultrasound investigation has become increasingly popular; MRI has clearly played an important and was essential in planning surgery as these lesions would not have been identified on USS. Even though the symptoms were classical.

1. Introduction

Impingement syndrome is often caused by encroachment of the rotator cuff on the coraco-acromial arch, the acromio-clavicular joint or occasionally the coracoid [1]. Iatrogenic causes such as sutures, pins or wires left from previous surgery can cause similar symptoms. We present a series of four cases mimicking classical impingement symptoms/signs in which the causal pathology existed outside the sub-acromial space. MRI showed lesions, which were present in the supra-spinatus fossa but were causing pressure effects on the sub-acromial space, namely - a ganglion cyst, lipomata, and a glomus tumour.

These are unusual causes that should be considered when investigating "classical" impingement syndrome and particularly those who have failed to respond to "decompression" surgery. They highlight the potential value of looking beyond the sub-acromial space for causal lesions and in these cases, at a time when limited ultrasound investigation has become increasingly popular; MRI may play an important role.

* Corresponding author.
E-mail address: rohitamolsingh@hotmail.com (R. Singh).

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2. Case report 1

A 63-year-old gentleman presented with a 2-year history of worsening left shoulder pain and a painful arc.

On examination, he was tender over the cuff and with provocation of the acromio-clavicular (AC) joint. Hawkin's sign was positive and Neer's test using a mixture of local anaesthetic and steroid was positive, consistent with impingement.

He was investigated with X-rays and an MRI scan which showed evidence of an intramuscular lipoma within the supra-spinatus fossa causing pressure effects onto the sub-acromial space thereby causing symptoms (Fig. 1). The lipoma was not obvious clinically. A decision was made to proceed to left shoulder manipulation under anaesthesia (MUA), Arthroscopy ± subacromial decompression.

At surgery, the lateral extent of the lipoma was identified arthroscopically within the sub-acromial space and this was excised through a supra-lateral incision in-order to access the supra-spinatus muscle. A routine decompression was performed including distal clavicle excision. Histology confirmed the lesion to be a lipoma without any atypical features.

Immediate alleviation of pain and tenderness followed resection of the lipoma, and he remained pain free at 6-month follow up.

3. Case report 2

A 53-year-old gentleman presented with left shoulder pain, which was worse with elevation.

Examination revealed tenderness over the antero-lateral cuff and over the AC joint. He had a painful arc between 80 and 120° of abduction. Hawkins sign and Neer's test were positive.

A MRI scan was done to rule out a rotator cuff tear; however it showed a large fatty tumour in the supra-spinatus fossa (Fig. 2), which was not evident clinically.

At surgery, the fatty tumour was removed from the supra-spinatus fossa (Fig. 3). An AC joint excision and a sub-acromial decompression was performed. There was no evidence of a rotator cuff tear. Histology confirmed that the patient had a benign lipoma.

Immediate alleviation of pain and tenderness followed resection of the lipoma, and he remained pain free at 6-month follow up.

Fig. 1. Fat sensitive MRI sequences show a fatty tumour.

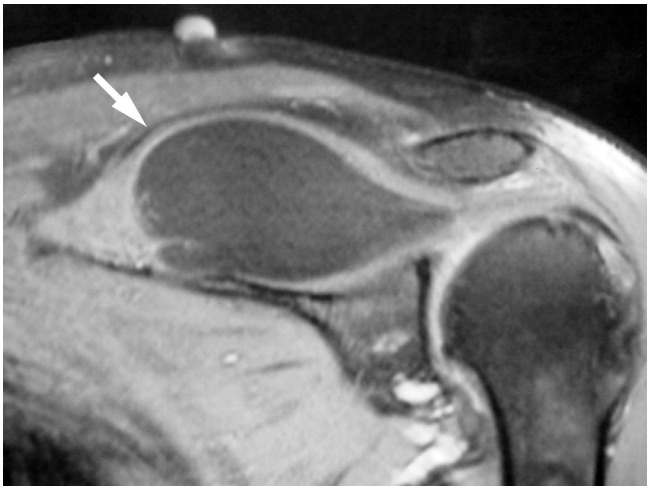

Fig. 2. Fluid sensitive sequences showing fatty tumor in supraspinous fossa.

Fig. 3. Intra-operative photograph showing fatty tumor from supraspinous fossa.

4. Case report 3

A 51-year-old gentleman presented with pain and restricted movement affecting his right shoulder.

Signs and symptoms were consistent with AC joint pain and impingement.

He had a short-lived response to an AC joint injection. Therefore, a right shoulder arthroscopy and open excision of the acromio-clavicular joint was performed. During surgery the sub-acromial space was found to be entirely normal and no decompression was performed. The distal end of the clavicle was excised and the shoulder checked intra-operatively for any signs of impingement.

Despite physiotherapy he continued to have painful symptoms consistent with impingement.

A subsequent MRI arthrogram showed a cystic structure within the supra-spinatus muscle measuring 7 cms in length and 1.4 cms in depth (Fig. 4), consistent with a ganglion type cyst, likely to cause patients symptoms. Surgical resection of the ganglion cyst was carried out. At 6 months follow up; the patient had recovered a normal range of pain free movement.

5. Case 4

A 70-year-old gentleman presented with persistent right