Spontaneous resolution of an intramuscular supraspinatous cyst: a case report and literature review

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Abstract

Intramuscular supraspinatous cysts are rare and usually related to partial supraspinatous tendon tears. Conventional magnetic resonance imaging (MRI) and MRI arthrography are the most commonly used modalities for imaging such rotator cuff pathology. Treatment and follow-up of such cysts is not well documented in the literature. We report the successful conservative management and follow-up of a patient with a supraspinatous cyst. A patient presented with a 2-month history of right shoulder pain following painting and decorating. An MRI scan showed a supraspinatous cyst and thinning of the supraspinatous tendon. The patient was treated conservatively and at 6 months follow-up was found to be asymptomatic. A repeat MRI scan confirmed complete resolution of the supraspinatous cyst.

Keywords

Supraspinatous cyst; MRI; shoulder impingement; intramuscular cyst; rotator cuff tear.

Introduction

There are three types of periarticular shoulder cysts reported in the literature: paralabral cysts which result from a glenoid labral tear\textsuperscript{[1]}, acromioclavicular juxta-articular cysts associated with a full-thickness rotator cuff tear and a degenerative acromioclavicular joint\textsuperscript{[2]}, and intramuscular rotator cuff cysts which are rare. The rarer intramuscular cysts are considered to be caused by a partial or complete tear in the rotator cuff tendon which allows fluid from the glenohumeral joint or associated bursa to enter the substance of the rotator cuff tendon and then dissect along the fibres to form a cyst either within the sheath or substance of the muscle. It is possible that fluid that has entered the rotator cuff tendon may also enter the adjacent tendon thus forming an intramuscular cyst in a muscle without a tendon tear\textsuperscript{[3]}. Magnetic resonance imaging (MRI) arthrography and conventional MRI have been reported to be the most useful imaging modalities for the investigation of rotator cuff pathology\textsuperscript{[4]}. MRI criteria used for an intramuscular cyst in the rotator cuff include a mass contained within the fascial...
sheath or substance of a rotator cuff muscle that followed water signal intensity on all pulse sequences. Periarticular cysts are usually asymptomatic, but strategically placed cysts can give rise to compressive neuropathies which can mimic rotator cuff tear[5]. The purpose of this study is to report successful conservative management and follow-up of a large intramuscular supraspinatous cyst in a 49-year-old patient. A literature search was carried out using PubMed, Medline and Cochrane databases.

Case report

A 49-year-old female patient, right hand dominant, complained of right shoulder pain and stiffness following an episode of decorating. A plain radiograph confirmed moderate degenerative changes affecting the acromioclavicular joint with down sloping of the lateral process of the acromion reducing the subacromial space. The patient subsequently had an MRI scan of her right shoulder which showed acromioclavicular joint hypertrophy with reduction of the subacromial space. The supraspinatous tendon was thin and there was an intramuscular cyst in the posterior belly of the supraspinatous muscle. The cyst was continuous with a subacromial and a large subdeltoid bursa which extended 7 cm down the shaft of the proximal humerus (Fig. 1). There was no high signal identified in the rotator cuff tendon to suggest a tear. The patient was treated conservatively with physiotherapy and analgesia. After 2 months, the patient reported significant improvement in her right shoulder pain and conservative management continued. At 6-months follow-up, the patient was asymptomatic with a normal range of movement of her right shoulder. A repeat MRI scan of the right shoulder showed complete resolution of the intramuscular cyst. The subacromial and subdeltoid fluid collections had almost completely resolved with just a trace of subdeltoid fluid remaining (Figs. 2 and 3).

Discussion

There have been only two previous publications describing an association between intramuscular cysts and rotator cuff tears in the literature. Both studies were retrospective and reported that the significance of these cysts was an association with a partial or small full thickness tear of a rotator cuff tendon even if not obvious on a MRI scan. The sensitivity and specificity of conventional MRI for the diagnosis of partial thickness rotator cuff tears has been reported as 35–82%[6]. To our knowledge, the conservative management and outcome of intramuscular supraspinatous cysts has not been documented in the literature. In fact surgical management, although reported, does not have a good outcome. In one study, 13 cases of intramuscular cysts were identified of which 5 underwent arthroscopy and rotator cuff repair and in one case aspiration was conducted; however, no follow-up was available for any of these patients[7].
A second study has also not reported on the outcome of surgical or conservative management in their patient group[6].

We report the successful conservative management and follow-up of a patient with an intramuscular supraspinatous cyst. At 6 months follow-up, there was a spontaneous resolution of the cyst as seen on MRI and the patient was asymptomatic with a normal range of shoulder movement. We deduce that a small partial rotator cuff tear is likely to have healed spontaneously resulting in resolution of the intramuscular cyst in our patient.

Teaching point

We recommend that conservative management of an intramuscular cyst associated with a confirmed or suspected partial rotator cuff tear can be attempted; however, if symptoms persist then surgical intervention would be a reasonable option. This strategy will save patients unnecessary surgery as a small tear may heal spontaneously.
References