Coracoid Impingement Syndrome: A treatable cause of anterior shoulder pain

ABSTRACT

Background Coracoid Impingement Syndrome is a relatively uncommon but generally treatable cause of anterior shoulder pain that can be easily overlooked. It typically presents with anterior shoulder joint pain in activities involving forward flexion, adduction and internal rotation.

Aims To assess the outcome of a cohort of patients diagnosed with Coracoid Impingement Syndrome.

Methods Patients were investigated clinically and radiologically. They received appropriate therapeutic measures and were followed-up in an orthopaedic outpatient setting.

Results Twelve patients were identified over a four-year period. All patients have made good progress. Thus far, none have needed operative intervention for symptom relief.

Conclusion Coracoid impingement syndrome is an uncommon cause of anterior shoulder pain but diagnosed patients can expect good symptomatic relief following referral to a dedicated shoulder unit. An increase in clinical awareness of the condition may prevent undue diagnostic delay in such cases.

INTRODUCTION

Anterior shoulder pain can be particularly difficult to diagnose. The differential diagnosis includes impingement syndromes, rotator cuff injury and shoulder instability. Overlap between diagnoses can be present in certain cases leading to complex clinical findings. This can lead to diagnostic delay and therefore prolonged symptomatology. Many clinical shoulder tests have been documented but these sometimes prove difficult to interpret if the examiner does not routinely treat advanced shoulder problems.

Coracoid impingement Syndrome is a relatively uncommon but treatable cause of shoulder pain. It usually presents with anterior shoulder discomfort in activities involving forward flexion, adduction and internal rotation. A literature review identifies three main causes of the condition: idiopathic, traumatic and iatrogenic. The condition is usually very difficult to diagnose due to the paucity of consistently reproducible clinical signs. This syndrome is sparsely documented but has been shown to be treatable with both conservative and operative measures. The coracoid impingement test is presently the best diagnostic indicator of the condition. We found that patients with a positive coracoid impingement test often reported that their pain was also aggravated by a shoulder position of abduction and internal rotation. In this case series we have demonstrated that diagnosed patients can expect good symptom relief from appropriate therapeutic regimens. An increased clinical awareness of this condition may obviate undue diagnostic delay in otherwise unresolved cases of chronic anterior shoulder pain.

MATERIAL AND METHODS

A prospective review of patients presenting with anterior shoulder pain to a regional orthopaedic shoulder service was carried out. Each individual was assessed both clinically and radiologically in an outpatient clinic setting by a single consultant orthopaedic surgeon.

Radiographic views comprised antero-posterior views in internal and external rotation of the shoulder in addition to axillary lateral views. In all cases these revealed no obvious radiological abnormality. Although magnetic resonance imaging and shoulder arthrography may prove helpful in diagnosing certain cases of anterior shoulder pain, we employed the former as a baseline investigation whenever other diagnoses were strongly suspected.

Tenderness was present in the antero-medial shoulder over the coracoid process in all patients. Neurological function was normal and muscle power was MRC grade 5 in the affected limbs. Other causes of shoulder pain were excluded. Subacromial
impingement syndromes, rotator cuff pathology, biceps disorders, labral lesions and radiculopathy were out-ruled as the primary cause of each patient’s symptoms. Specific impingement tests were undertaken including Yergason’s and Speed’s tests and all proved to be negative. The entire cohort had a positive coracoid impingement test on the side of the affected shoulder.

All cases were initiated on a treatment ladder that progressed in a stepwise fashion from activity modification and further courses of non-steroidal anti-inflammatory drugs with physiotherapy, to infiltration of the coraco-humeral interval with a lignocaine/hydrocortisone solution. The same consultant surgeon reassessed each patient at subsequent clinic visits. The duration of follow-up was largely determined by the response to treatment. The results were recorded in a computerised database enabling detailed analysis (Microsoft® Access, Microsoft Corporation).

RESULTS

The duration of the study was a four-year period (1999 to 2003). Twelve patients in total were identified as having coracoid impingement syndrome. The study group comprised eight men and four women. The average age was 44.3 years (range 26 to 54 years). The average duration of patient follow-up was 14.4 months (range 3 to 35 months).

The mean duration of shoulder symptoms, namely point tenderness of the coracoid and anterior shoulder pain or discomfort, was 8.9 months (range 1 to 25 months; standard deviation 6.33 months). Two thirds of the cases involved the dominant side (Table 1).

Six of the cases were of idiopathic origin and six were associated with trauma of varying aetiology. The traumatic cases comprised a fall down stairs, a fall from a stepladder, two road traffic accidents, an old lifting injury and a case of presumed repeated microtrauma to the shoulder joint secondary to strenuous gym activity. There were no incidences of iatrogenic causation. None involved major trauma (i.e. there were no associated fractures of the shoulder girdle or upper limb). All cases involved anterior shoulder pain of a chronic nature. Every patient experienced activity related symptomatology. The age distribution of the patients was slightly different to other published series in that there was a preponderance towards individuals over 50 years of age (42%). Only one patient had definite signs of concurrent shoulder pathology. This 54-year-old male was diagnosed with coracoid impingement syndrome in addition to evidence of rotator cuff degeneration as confirmed by clinical findings and magnetic resonance imaging. This patient responded well to treatment with a subcoracoid nonsteroidal anti-inflammatory injection in addition to rotator cuff strengthening physiotherapy.

The entire study group was evaluated with plain films. The diagnostic yield was poor as no cases of the ailment could be confirmed based on these findings. In one instance, the plain films showed an aberrant coracoid morphology but no definite coraco-humeral narrowing. Five patients were further assessed with magnetic resonance imaging and this measure served mainly to exclude concurrent shoulder pathology i.e. rotator cuff lesions and other bony abnormalities. None of these cases showed conclusive evidence of abnormal spatial relationships between the position of the coracoid process in relation to either the humeral head or glenoid. One set of MRI films suggested a reduced coraco-humeral interval while another showed evidence of rotator cuff degeneration.

All patients were tender in the region overlying the coracoid process. All cases were positive for the coracoid impingement test. Pain and discomfort was elicited to a varying degree when the shoulder was placed in a position of cross arm adduction, forward elevation and internal rotation. It was also noted that discomfort was evoked in extremes of shoulder abduction and internal rotation. Five of the patients were able to voluntarily identify this position as a source of discomfort and described situations such as depressing the door lock button in their cars as being painful. The arm is in a position of ninety degrees of abduction and maximal internal rotation during this manoeuvre.

All cases were given trial courses of non-steroidal anti-inflammatory medication. Most cases had already been trialled previously with anti-inflammatories by their primary healthcare providers. One patient responded well to activity modification and physiotherapy alone. The remainder had symptomatic relief following an injection of local anaesthetic and steroid solution into the subcoracoid region. Seven have had complete resolution of normal shoulder function.