



Arthroscopic resection of a symptomatic snapping subscapular osteochondroma

Roger P. VAN RIET, Francis VAN GLABBEK

From the University Hospital Antwerp, Edegem, Belgium

Painful snapping of the scapula may have an anatomical cause but is usually idiopathic. Most patients respond well to conservative measures such as physiotherapy or non-steroidal anti-inflammatory drugs. Surgery can be performed if conservative treatment is unsuccessful. Conservative measures are less likely to be successful if a clear anatomical cause can be found. Several surgical techniques have been described, ranging from bursectomy to resection of the lesion or of part of the scapula. The lesion is usually resected by an open technique. Scapulothoracic arthroscopy has previously been shown to be a safe procedure with low morbidity in idiopathic cases. A case is described in which painful crepitus of the scapula not responding to conservative measures was caused by an inferior subscapular osteochondroma. Arthroscopic resection of the osteochondroma was performed using a custom, lesion specific, inferior portal. This resulted in restoration of a full and painless function of the shoulder within two weeks of surgery.

Keywords : osteochondroma ; shoulder ; arthroscopy ; scapulothoracic ; snapping scapula ; pseudowinging.

INTRODUCTION

An anatomical cause is rarely found in patients with painful crepitus of the scapula. However in rare cases bony abnormalities such as osteochondromata (2, 8), os omovertebrale in Sprengel's deformity (1), rib or scapula fracture malunion (8), or excessive angulation of the scapula (3), can be

found. Conservative treatment is initiated but if this fails, or if a clear anatomical cause is found, resection of the lesion is indicated. Surgery has traditionally been performed through an open technique (5) but arthroscopic techniques have also been described (4, 6, 9). We describe a case of painful snapping of the scapula caused by an osteochondroma treated with arthroscopic resection.

CASE REPORT

A 28-year-old female presented to our department with painful crepitus of the left scapula. She did not recall any traumatic incident to the shoulder. The symptoms had been present for 24 months. Conservative treatment to this point had consisted of physiotherapy, anti-inflammatory drugs and corticosteroid infiltrations. This had a temporary effect but symptoms progressively worsened.

-
- Roger P. van Riet, MD, PhD, Orthopaedic Resident.
 - Francis Van Glabbeek, MD, PhD, Staff Orthopaedic Surgeon.

Department of Orthopaedic Surgery and Traumatology University Hospital Antwerp, Edegem, Belgium.

Correspondence : Roger P. van Riet, Department of Orthopaedics and Traumatology, University Hospital Antwerp, Wilrijkstraat 10, 2650 Edegem, Belgium.

E-mail : rogervanriet@hotmail.com.

© 2007, Acta Orthopædica Belgica.



Fig. 1. — Radiographic image of the scapula clearly showing the osteochondroma in the inferior third of the scapula in the scapulothoracic articulation.

Clinical examination of the shoulder showed pseudo-winging of the scapula, indicative of a space-occupying lesion in the subscapular space. There was no clear atrophy of shoulder musculature. The shoulder had a full range of motion and normal stability. Scapulohumeral rhythm was disturbed due to pain as the patient guarded the scapulohumeral joint during elevation as a palpable and audible crepitus was observed. Palpation of the inferomedial corner of the scapula was tender. Standard radiographs showed an osteochondroma (fig 1). A computed tomography scan confirmed the diagnosis.

It was decided to perform an arthroscopic resection of the lesion. The patient was placed in lateral decubitus with the arm in traction (4 kg) in 30° of abduction. A first portal was created 5 cm medial to the medial margin of the scapula, inferior to the scapular spine, halfway between the superomedial and inferior corner of the scapula. A second working portal was made 5 cm medial to the inferior corner of the scapula. Arthroscopic inspection



Fig. 2. — Scapulothoracic arthroscopic view of the osteochondroma of the scapula following debridement of overlying inflamed soft tissue.

showed the conflict between the osteochondroma and the thoracic cage (fig 2). Inflamed surrounding soft tissues were removed using a soft tissue shaver, and a burr was used to resect the osteochondroma. Postoperatively, the arm was placed in a sling for comfort and the patient was encouraged to progressively mobilise the arm under supervision of a physiotherapist. The patient noted no further clicking and had regained full pain free range of motion at 2 weeks follow-up.

DISCUSSION

It is important to differentiate between idiopathic cases and patients with an anatomic cause of painful crepitus of the scapula. A clear history including trauma, occupation, hobbies and sports should be obtained, as trauma (6, 9) and overuse have both been identified as causes of snapping scapula syndrome (6). Winging of the scapula could indicate a long thoracic nerve paralysis (10). As was noted in this case, pseudo-winging can be indica-

tive of a subscapular space occupying lesion such as an osteochondroma (2, 8). Imaging studies however, remain imperative to accurately diagnose anatomical causes of snapping scapula syndrome.

The differentiation between anatomical causes or idiopathic cases is important as conservative treatment is less likely to be successful if a clear anatomical cause can be found.

Surgical intervention is the only reliable treatment of a symptomatic subscapular osteochondroma and previous reports described an open technique (8). However, we performed an arthroscopic resection of the osteochondroma, leaving the scapula intact, resulting in a painless normal function of the scapulothoracic joint.

Advantages of arthroscopic resection of the osteochondroma include tailored resection of the lesion, quicker recovery and low complication rate (6). Disadvantages include the technical difficulty of an arthroscopy in the scapulothoracic joint, where there are limited bony landmarks for accurate orientation of the instruments and the potential of damage to the accessory and dorsal scapular nerves. However, no neurological lesions have been described following scapulothoracic arthroscopy. Ruland *et al* (7) recommended arthroscopic portals to be placed inferior to the scapular spine and three to four finger-breadths medial to the scapula to avoid neurovascular damage. Ruland's viewing portal was used in the case described as well as an inferior, lesion specific, portal that has not been described before.

We experienced no technical problems and full recovery was achieved within two weeks. Low morbidity and the possibility of an adequate resection of the osteochondroma make arthroscopic resection the treatment of choice in similar cases.

REFERENCES

1. **Alvik I.** Snapping scapula and Sprengel's deformity. *Acta Orthop Scand* 1959 ; 29 : 10-15.
2. **Cooley LH, Torg JS.** "Pseudowinging" of the scapula secondary to subscapular osteochondroma. *Clin Orthop* 1982 ; 162 : 119-124.
3. **Edelson JG.** Variations in the anatomy of the scapula with reference to the snapping scapula. *Clin Orthop* 1996 ; 322 : 111-115.
4. **Harper G, McIlory S, Bayley J, Calvert P.** Arthroscopic partial resection of the scapula for snapping scapula : A new technique. *J Shoulder Elbow Surg* 1999 ; 8 : 53-57.
5. **Kuhn JE, Plancher KD, Hawkins RJ.** Symptomatic scapulothoracic crepitus and bursitis. *J Am Acad Orthop Surg* 1998 ; 6 : 267-273.
6. **Pavlik A, Ang K, Coghlan J, Bell S.** Arthroscopic treatment of painful snapping of the scapula by using a new superior portal. *Arthroscopy* 2003 ; 19 : 608-612.
7. **Ruland LJ 3rd, Ruland CM, Matthews LS.** Scapulothoracic anatomy for the arthroscopist. *Arthroscopy* 1995 ; 11 : 52-56.
8. **Tomo H, Ito Y, Aono M, Takaoka K.** Chest wall deformity associated with osteochondroma of the scapula : A case report and review of the literature. *J Shoulder Elbow Surg* 2005 ; 14 : 103-106.
9. **van Riet RP, Bell SN.** Scapulothoracic arthroscopy. *Tech Shoulder Elbow Surg* 2006 ; 7 : 143-146.
10. **Wood VE, Verska JM.** The snapping scapula in association with the thoracic outlet syndrome. *Arch Surgery* 1989 ; 124 : 1335-1337.