

Hook Retraction for Scapulothoracic Arthroscopy

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Abstract

Scapulothoracic arthroscopy is an established method for evaluating the articulation between the thoracic cage and the scapula. The “chicken-wing” position is often used to enhance visualization of the scapulothoracic space. There are situations in which the chicken-wing position is not feasible or practical, such as in simultaneous arthroscopy of both joints. In this article, we describe a new technique that aids in arthroscopy of the scapulothoracic joint, particularly when the chicken-wing position is unavailable.

Scapulothoracic arthroscopy is an established method for evaluating the articulation between the thoracic cage and the scapula, typically for symptoms consistent with scapulothoracic syndrome.¹ This syndrome was first described by Boinet² in 1867, and its severity

was stratified according to its audible quality by Mauclaire³ in 1904. Milch⁴ was the first to recognize the 2 main causes of scapulothoracic syndrome—osseous anomalies and soft-tissue disorders. The syndrome can be managed nonoperatively, but recalcitrant cases are often amenable to surgery, either open or arthroscopic.⁵ In arthroscopic technique, 3 portals are used.⁶ As

for print and electronic publication of this case report.

CASE REPORT

An active-duty 28-year-old man presented with a long-standing history of bilateral snapping scapulae. This condition interfered with his use of body armor and load-bearing equipment and with his job of fueling vehicles. The pain

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with any arthroscopic procedure, visualization of spaces can be difficult. Visualization typically is enhanced with the patient in the “chicken-wing” position—prone with arm held behind back—which places the shoulder in extension, internal rotation, and adduction.^{5,7} This position elevates the medial border of the scapula. However, certain circumstances may preclude “chicken-winging.” For instance, simultaneous exploration of the scapulae necessitates having both arms draped free, but anesthesia requirements often call for maintaining access to at least one arm. The result is that it is very difficult to visualize at least one scapulothoracic articulation. In this article, we describe a new technique, use of a bone hook, which aids in arthroscopy of the scapulothoracic joint, particularly when the chicken-wing position is unavailable. The patient provided written informed consent

was especially noted with scapular retraction and had been present for more than 1 year. Symptoms were not improved after 4 months of physical therapy, which included resistance-band exercises, rowing, and other methods of chest-wall strengthening and stretching.

On physical examination, the snapping of both scapulae was audible and visible. Both shoulders had full range of motion, but there was pain with shoulder retraction. Results of radiography did not show any scapula deformities or anomalies. The patient wanted the snapping of both scapulae addressed. To address them simultaneously, we preferred an arthroscopic, rather than an open, approach.

Surgical Technique

Scapular arthroscopy is usually performed with the patient in the lateral decubitus position. We instead used the prone position so

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Figure 1. Placement of portal and hook. Hook is introduced medial to spine of scapula.

we could perform bilateral surgery without repositioning the patient. As anesthesia required intraoperative vascular access, we placed the patient's arms in the forward position. As a result, the chicken-wing position was possible on only one side. Both scapulae were outlined, prepared, and draped in the usual sterile fashion. Three 1-cm longitudinal incisions were made around each scapula. The first incision was made one third of the way between the acromion and the superior medial border. The second incision was made directly adjacent to the scapular spine to allow for introduction of the bone hook. The last portal was a posterior medial portal (Figure 1). Use of the bone hook allowed for distraction of the scapulothoracic space. A switching stick was placed from the inferomedial portal through a cannula placed in the superior portal—allowing for ease of triangulation under the scapula. The scapulothoracic bursa was visualized (Figure 2) and debrided with a radiofrequency device. The enhanced visualization facilitated use of a bone-cutting shaver to resect the supe-

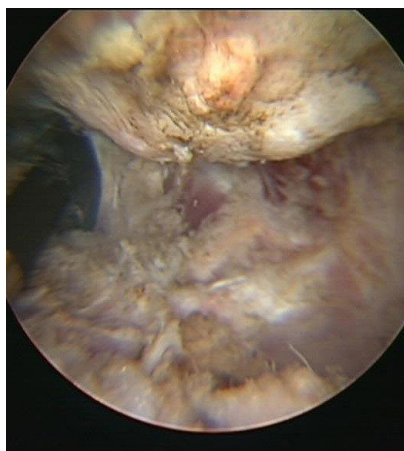


Figure 2. Enhanced visualization of scapulothoracic joint.

rior medial border of the scapulae. Once this had been performed, all instruments were retracted, and the incisions were closed. There were no complications during the case.

Postoperative Course

Bilateral scapulothoracic debridement was facilitated with use of a hook retractor. There were no complications from the added step of retraction. The patient was allowed to start caring for himself immediately after surgery, and both upper extremities were made weight-bearing as tolerated. He had some pain the first few days after surgery, but otherwise recovery was uneventful. At 2-week follow-up, the wounds were well healed, and he had begun resuming many of his activities. Neither scapula was snapping.

DISCUSSION

We have found that the use of hook retraction to enhance arthroscopy of the scapulothoracic joint is safe and easy. This technique makes use of a simple and readily available tool and existing standard arthroscopic portals, does not increase operative time, and adds little morbidity to

the procedure. Its main advantage is that it enhances visualization of the scapulothoracic joint and thus may be able to facilitate the procedure by enhancing triangulation in the superomedial region. It does not require making any modifications to standard scapulothoracic arthroscopy, and it can also be applied with the patient in the usual lateral decubitus position. Hook retraction should be considered when performing arthroscopy of the scapulothoracic joint.

Introducing a bone hook medial to the scapular spine can enhance visualization of the scapulothoracic articulation during arthroscopy. Specifically, it enhances triangulation under the superomedial corner of the scapula.

AUTHORS' DISCLOSURE STATEMENT

The authors report no actual or potential conflict of interest in relation to this article. The opinions or assertions contained herein are the private views of the authors and are not to be construed as official or as reflecting the views of the US Department of Defense or the US Army.

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