The Anatomy and Function of the Low Posterolateral Portal in Addressing Posterior Labral Pathology

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Purpose: A standard posterior portal allows excellent visualization of the glenohumeral joint but is inadequate for anchor placement because of its parallelism to the glenoid surface. The purpose of this study was to describe the low posterolateral portal for glenohumeral arthroscopy, describe the anatomy of the portal and surrounding structures, and discuss the portal's usefulness in addressing posterior and inferior shoulder pathology. **Methods:** Five cadaveric shoulders were dissected after placement of a spear through the low posterolateral portal. The location was identified via a spinal needle, 2 to 4 cm lateral and 4 to 5 cm inferior to the posterolateral corner of the acromion. Measurements from the spear to the anatomic structures were recorded with a caliper. Seventeen patients with posterior labral pathology were included in this study. The low posterolateral portal was established while visualizing through the anterosuperolateral or posterior portal. The spear and anchor were inserted through the low posterolateral portal. **Results:** Five shoulders were dissected, and the neurovascular structures relative to the low posterolateral portal were identified. The portal was 13.8 ± 1.6 mm from the axillary nerve and 13.4 ± 1.2 mm from the posterior humeral circumflex artery. In the retrospective review the low posterolateral portal was created without difficulty or complication in all 17 patients. The portal was extremely helpful for anchor insertion in the posteroinferior glenoid. It was useful in suture passage through the posterior and inferior labrum and in suture management. **Conclusions:** The low posterolateral portal provides the optimal angle for insertion of instruments and anchors, resulting in a more anatomic repair. **Clinical Relevance:** The standard 3 portals are not optimal for approaching posterior and inferior labral tears, and use of the low posterolateral portal improves access and treatment. **Key Words:** Shoulder arthroscopy—Portal—Posterolateral—Low—Labral—Inferior.

Treatment of posterior and inferior labral tears requires the use of several additional portals. The proper arthroscopy portals are necessary to perform complex repairs in difficult-to-reach areas. The posterior portal is the first portal made during shoulder arthroscopy and is used as the viewing portal for most arthroscopic procedures. During posterior labral repairs, the arthroscope may be placed in the anterior-superior or anterosuperolateral portal. In this situation the posterior portal becomes a working portal. It is relatively parallel to the glenoid surface and may be a poor choice for anchor insertion. The position of this portal does not allow one to reach the 6-o'clock position well. This portal is most useful for knot-tying and suture passage for posterior and inferior labral tears.

Other accessory portals for repairing SLAP tears[1,2] have been described, including the Neviaser portal[3] and the port of Wilmington (posterolateral portal).[4] The port of Wilmington is 1 cm anterior and lateral to the posterolateral border of the acromion. This portal is excellent for insertion of anchors in the posterosu-

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The authors report no conflict of interest.

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0749-8063/07/2309-0666$32.00/0
doi:10.1016/j.arthro.2007.04.011

perior quadrant of the glenoid but fails to reach the most inferior and posterior aspects of the glenoid. DiFelice et al.[5] described an accessory posterior portal located 2 cm inferior to the standard posterior portal. This may be a good working portal for suture passage and is our preferred posterior viewing portal, but it is also parallel to the glenoid surface and therefore not optimal for anchor insertion.

In an effort to optimize suture anchor insertion into the posterior and posteroinferior glenoid, we developed the low posterolateral portal. The purpose of this study is to describe the positioning of the low posterolateral portal and to present our initial data on the use of this portal. We hypothesize that it is a safe portal for arthroscopic procedures involving the posterior and inferior glenoid.

METHODS

A retrospective case review from July 2003 to September 2004 showed that 313 shoulder arthroscopies of the glenohumeral joint were performed. The indications for arthroscopy included instability and painful shoulders. The retrospective analysis found 17 patients with symptoms of posterior-inferior labral pathology, requiring the use of the low posterolateral portal. Establishment of the low posterolateral portal is performed as follows. Diagnostic arthroscopy is initiated through a standard posterior viewing portal. Once labral pathology is identified, standard anterior and anterosuperolateral portals are created via an outside-in technique. While visualizing through the anterosuperolateral or posterior viewing portal, a spinal needle[6] is introduced approximately 2 to 4 cm lateral and 4 to 5 cm inferior to the posterolateral border of the acromion (Fig 1). The needle hugs the posterior surface of the humeral head and reaches the glenoid rim at a 45° angle (Fig 2). We prefer to make a small stab incision and then introduce a cannulated spear

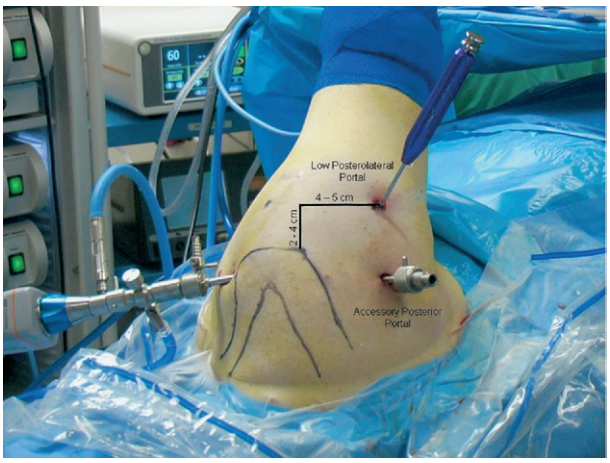

FIGURE 1. Right shoulder in lateral decubitus position showing placement of spear through low posterolateral portal. Measurements are 2 to 4 cm lateral and 4 to 5 cm inferior to the posterolateral corner of the acromion.

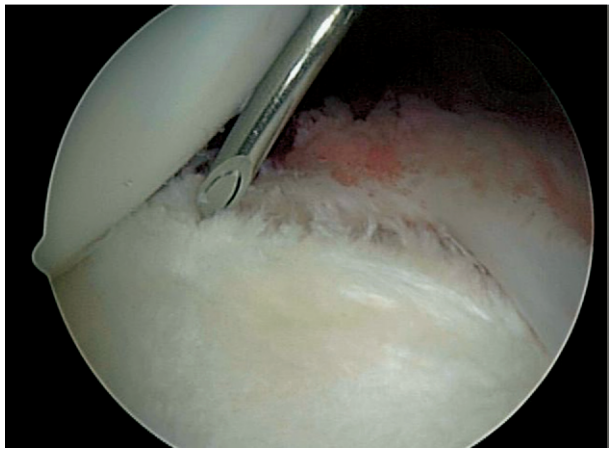

FIGURE 2. Insertion of spinal needle through low posterolateral portal via outside-in technique viewed from anterosuperolateral portal (right shoulder).

TABLE 1. *Modification of SLAP Classification of Nord and Colleagues*[7,8]

SLAP Type	Description
I	Degeneration or fraying without detachment
II	Detachment of superior labrum at biceps tendon anchor, subdivided into A (anterior to biceps), B (posterior to biceps), and C (combined anterior and posterior)
III	Bucket-handle tear of superior labrum without biceps involvement
IV	Bucket-handle tear of superior labrum that extends into biceps
V	Continuation of Bankart detachment superiorly to involve anterosuperior labrum and biceps anchor
VI	Biceps tendon separation with anteriorly or posteriorly based flap tear of superior labrum
VII	Extension of biceps tendon, superior labrum separation anteriorly to below middle glenohumeral ligament
VIII	SLAP extension along posterior glenoid labrum as far as 6 o'clock
IX	SLAP extension 360° around glenoid labrum, pan-labral
X	Superior labral tear associated with posterior-inferior labral tear