



## CASE REPORT

# Absence of the long head of biceps tendon in an unstable shoulder

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## Introduction

Many anatomical variants are recognized in the morphology of the long head of the biceps tendon (LHBT) and several studies have shown its importance in stabilising the glenohumeral joint.<sup>4,9,10,13</sup>

Reviewing the English literature, we found only two reported cases of intra-articular absence of the LHBT discovered during arthroscopic examination.<sup>8,13</sup>

We report a case of anterior instability with a Bankart lesion and absence of the LHBT discovered during arthroscopy. The patient was free of symptoms after the arthroscopic Bankart repair.

This reported case as well as a previous case reported by Glueck et al.<sup>3</sup>, questions puts in doubt the importance of the LHBT as an anterior stabilizer of the shoulder.

## Case report

A 21-year-old soldier was referred to the shoulder outpatient clinic with a history of anterior dislocation of his left shoulder due to a sudden forceful motion of abduction external rotation, 18 months prior to his referral. The dislocation was reduced and after six

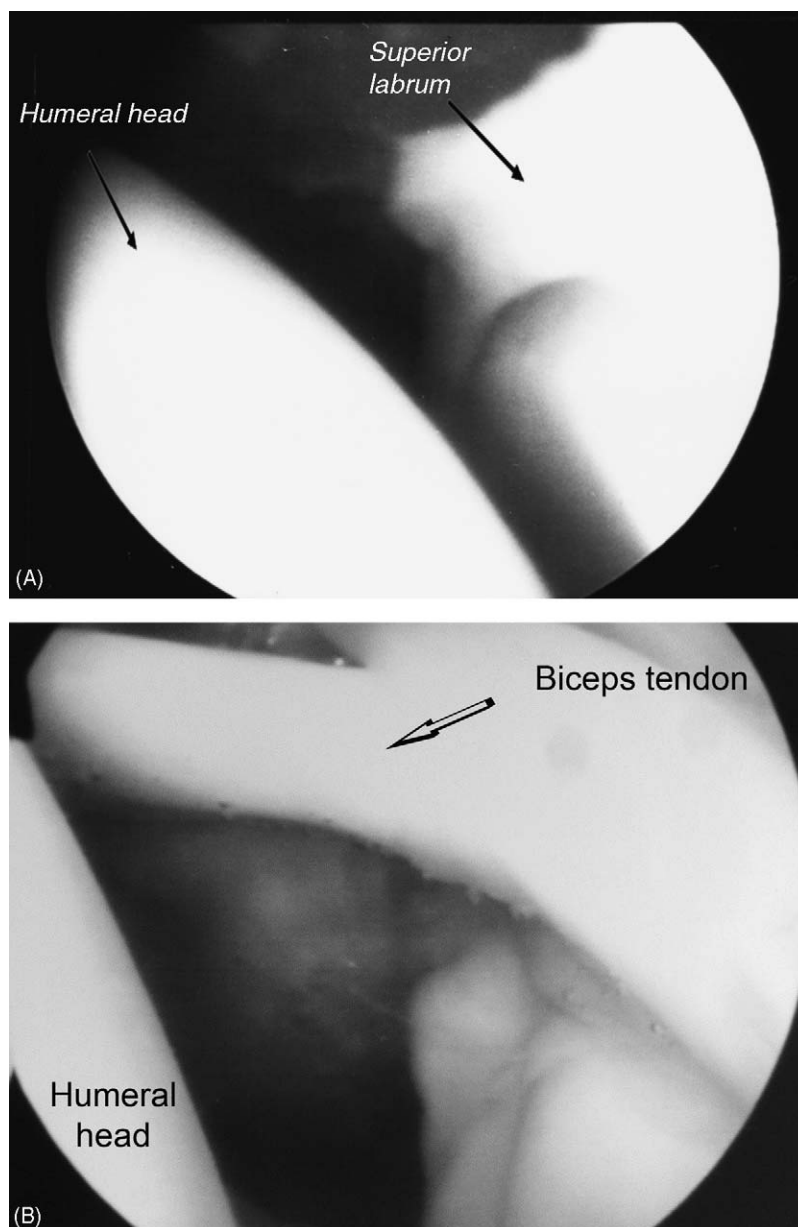
weeks of immobilization in a shoulder immobiliser, the patient began a rehabilitation program.

Six months later a second dislocation of the left shoulder occurred while pushing a heavy object. The dislocation was reduced again. Since then, the patient has complained of discomfort, a sense of instability of, and tingling in his left shoulder.

The physical examination revealed tenderness over the anterior joint line and a positive anterior apprehension test. There was a full range of motion, normal muscle strength and a normal contour of the muscles surrounding the shoulder including the biceps muscle. A magnetic resonance image (MRI) was obtained, and a Bankart lesion, as well as a Hill Sacks lesion was demonstrated. Arthroscopy was performed in order to repair the Bankart lesion. The Examination under anesthesia revealed anterior instability of the left shoulder with translation of the humeral head over the glenoid rim. The glenohumeral joint was entered from the posterior portal. Immediately on entering the joint an absence of the tendon of the long head of the biceps was noted (Fig. 1). The superior labrum was intact with no evidence of bicipital tendon rupture. Bankart lesions as well as a Hill Sacks lesion were identified and an arthroscopic Bankart repair was performed. Postoperatively the shoulder was immobilized for 6 weeks after which the patient started a rehabilitation program. A review of the MRI confirmed the absence of the LHBT (Fig. 2).

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**Figure 1** (A) Arthroscopic view of the shoulder in the beach-chair position. Complete absence of the long head of biceps tendon is noted. (B) Arthroscopic view of a normal shoulder with an intact long head of biceps tendon.

Six months after the operation the patient was free of symptoms and had a full range of motion, normal strength and a negative apprehension test.

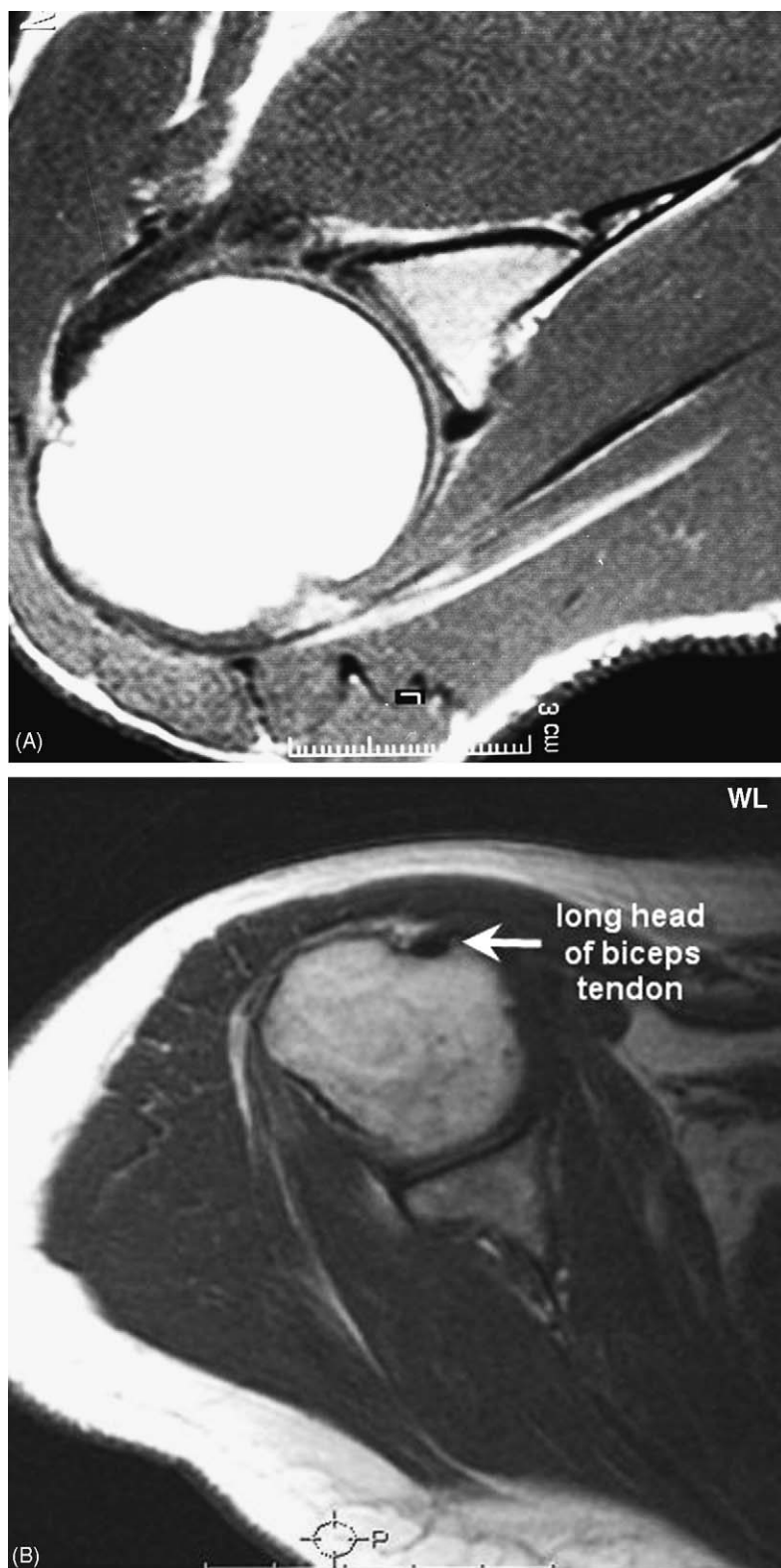
The last follow up meeting took place two and a half years after the operation. The patient was free of symptoms and signs of instability.

## Discussion

Multiple studies discuss the intra-articular anatomy of the long head of biceps tendon and the labral-bicipital complex,<sup>1,5,12</sup> but only a few case reports describe its anomalies.<sup>7,8,13,14</sup>

In the stable shoulder, the LHBT was thought to be a depressor of the humeral head and several studies have shown its importance in stabilizing the glenohumeral joint.<sup>6,11</sup> Glousman et al.<sup>2</sup> were the first to consider the LHBT as an anterior stabilizer, based on EMG findings. Itoi et al.,<sup>4</sup> studied the contribution of the LHBT to anterior stability in cadaver shoulders and concluded that it functions as an anterior stabilizer. Rodosky et al.<sup>10</sup> have also emphasized the role of the LHBT in anterior stability of the glenohumeral joint.

Two case reports discuss the arthroscopic finding of absence of the LHBT and only in one, reported by Glueck et al.<sup>3</sup>, instability of the shoulder was diag-



**Figure 2** (A) Axial MRI cut shows Bankart lesion and Hill Sacks lesion with no evidence of a tendon within the bicipital groove. (B) Axial MRI cut of a normal shoulder with the long head of biceps tendon in the bicipital groove.

nosed. They describe a case of a 25-year-old woman with left shoulder pain without a clear history of instability. Her examination under anesthesia revealed marked laxity and during arthroscopy a complete absence of the LHBT was found with no evidence of Bankart lesion or Hill Sacks lesion. A thermal capsular shrinkage was performed and 1.5 years after the procedure she was free of symptom and signs.

The patient in our case report had a clear history of instability and the MRI study demonstrated Bankart lesion as well as a Hill Sacks lesion. The absence of the LHBT was discovered during the arthroscopic examination of the glenohumeral joint before performing the arthroscopic Bankart repair.

Similar to the case reported by Glueck et al. the absence of the LHBT was initially overlooked on the MRI study and was only observed by reviewing the MRI after the operation.

As mentioned above, theoretically, the absence of the LHBT should have contributed to the shoulder instability of our patient; however, he was symptom free after repairing only the bankart lesion. Furthermore, in the case described by Glueck et al. shoulder stabilisation was achieved after only performing capsular shrinkage.

Although one can not draw a final conclusion out of only two case reports, the fact that in both reported cases stabilization was achieved without addressing the absence of the LHBT challenges the importance of its role as a stabilizer of the shoulder.

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