work, intellectual challenge, and positive clinical exposure. However, a significant knowledge gap exists, with nearly half of students rating their understanding of the specialty as poor or very poor. These findings highlight the need for enhanced anesthesiology education and early clinical exposure in medical curricula. By improving awareness and providing quality rotation experiences, medical schools can help students make informed career choices and support future workforce needs in anesthesiology.

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УДК 617.572-001-009.7-036.12-07-089

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CASE-BASED CLINICAL ANALYSIS OF DELAYED DIAGNOSIS OF SLAP LESION IN CHRONIC SHOULDER PAIN: CLINICAL IMPORTANCE OF MRI VERIFICATION, TIMELY SURGERY, AND PREVENTION OF FUNCTIONAL IMPAIRMENT

Introduction

Persistent shoulder pain is a frequent problem in traumatology and orthopedics, and one of its major difficulties is that intra-articular lesions may present with nonspecific symptoms and imitate more common periarticular disorders. Superior labrum anterior-to-posterior (SLAP) lesion is especially important because it may remain undetected for a long time and lead to chronic pain, reduced performance, limitation of movement, and deterioration of quality of life. Clinical examination may raise suspicion of SLAP pathology, but recent evidence shows that physical examination maneuvers alone have limited standalone diagnostic accuracy and are best interpreted in combination with imaging and the overall clinical picture [1, 2].

The practical significance of this problem lies in the consequences of diagnostic delay. Continued unsuccessful conservative treatment promotes chronic pain, secondary stiffness, loss of work or sports capacity, and risk of long-term functional dissatisfaction. MRI therefore occupies an important place in the diagnostic algorithm, especially in patients with persistent symptoms despite standard treatment. Recent meta-analytic evidence shows that MRI has moderate sensitivity but high specificity for SLAP lesions, making it particularly valuable for confirming the diagnosis, whereas arthroscopy remains the reference standard when clinical uncertainty persists [5].

The present study analyzes two clinical cases in which chronic shoulder pain was initially managed as shoulder-scapular periarthritis, whereas MRI later established the diagnosis of SLAP lesion. The cases are clinically valuable because they illustrate the orthopedic consequences of late

recognition of labral pathology and the practical importance of timely imaging, rational surgical indication, and structured rehabilitation for restoration of function [3, 4].

Goal

The aim of this research was to analyze the clinical course, diagnostic delay, MRI-based verification, treatment, and functional consequences of SLAP lesion in patients with chronic shoulder pain, and to demonstrate the importance of early recognition of intra-articular shoulder pathology for restoration of function and prevention of long-term impairment.

Material and methods of research

This work was performed as a descriptive case-based clinical analysis of two patients with delayed-diagnosed SLAP lesion of the shoulder. The following parameters were evaluated from the case histories: age, affected side, probable etiologic background, symptom pattern, limitation of movement, primary clinical diagnosis, previous conservative treatment, timing and role of MRI, type of surgical intervention, and postoperative outcome. Particular attention was paid to the factors contributing to delayed diagnosis and to the functional consequences of prolonged untreated labral injury.

Both patients had chronic symptoms and insufficient response to conservative management. After MRI verification of the lesion, arthroscopic suturing of the superior labrum was performed, followed by rehabilitation. The observations were compared in order to identify clinically relevant patterns that may help improve diagnostic vigilance in traumatology practice and reduce the risk of chronic disability.

The results of the research and their discussion

In both analyzed cases, patients had prolonged shoulder pain and were initially treated for shoulder-scapular periarthritis. Conservative treatment included exercise-based therapy, physiotherapy, PRP therapy, nonsteroidal anti-inflammatory drugs, and local steroid therapy, but did not achieve durable improvement. Only after MRI was performed was the true source of symptoms identified as a SLAP lesion. This pattern is consistent with the known diagnostic complexity of superior labral injury, where nonspecific symptoms may delay recognition if imaging is postponed [2, 5].

After MRI-based verification, both patients underwent arthroscopic superior labral repair. In the first case, pain regressed and rehabilitation was begun. In the second case, pain was completely relieved, range of motion was fully restored, and the patient returned to full physical and work activity. These outcomes show that modern minimally invasive surgery combined with rehabilitation can provide meaningful restoration of function once the diagnosis has been correctly established.

Table 1 – Baseline clinical and diagnostic characteristics

Parameter	Case 1	Case 2
Year of birth	1988	1975
Affected shoulder	Left	Right
Probable etiologic factor	Repeated sports microtrauma; former professional volleyball player	No definite trauma reported
Main complaints	Persistent pain during physical activity	Persistent pain during activity, at rest, and at night
Instability/dislocation history	Absent	Absent
Functional limitation before MRI	Pain with loading	Abduction and flexion limited to 90°
Initial diagnosis	Shoulder-scapular periarthritis	Shoulder-scapular periarthritis
Conservative treatment before MRI	Exercise therapy, shock wave therapy, physiotherapy, PRP, NSAIDs, local steroids	Exercise therapy, ultrasound therapy, physiotherapy, PRP, NSAIDs, local steroids
Diagnostic verification	MRI	MRI
Final diagnosis	SLAP lesion	SLAP lesion

Table 2 – MRI significance, consequences of delayed diagnosis, and treatment outcome

Parameter	Case 1	Case 2
Delay before definitive diagnosis	Long chronic course after earlier sports injuries	MRI performed five years after initial presentation
Why MRI became important	Persistent pain despite treatment	Persistent pain, night pain, motion loss, failed treatment
Typical MRI hallmarks relevant to diagnosis	Superior labral signal abnormality or detachment near the biceps anchor	Superior labral signal abnormality or detachment near the biceps anchor
Consequences of late diagnosis	Prolonged activity-related pain and sports limitation	Chronic pain, night symptoms, marked ROM restriction, work limitation risk
Definitive treatment	Arthroscopic superior labral repair	Arthroscopic superior labral repair
Postoperative result	Pain relieved; rehabilitation initiated	Pain completely relieved; full ROM restored; return to full activity

The comparison shows that delayed diagnosis is not merely a formal issue: it prolongs ineffective treatment and increases the risk of chronic pain and disability. Earlier MRI in patients with refractory symptoms may shorten the path to definitive management. Management of symptomatic SLAP lesion is currently individualized. Nonoperative treatment remains first-line in many patients, but persistent pain, mechanical symptoms, high functional demands, and failure of adequate rehabilitation strengthen the indication for surgery [2, 5].

In younger and physically active patients, especially overhead athletes, arthroscopic repair remains an important joint-preserving option. In older or more degenerative cases, and when pathology of the long head of the biceps predominates, biceps tenodesis is increasingly used in contemporary practice. Recent reviews show that biceps tenodesis may provide outcomes comparable to SLAP repair and, in some patient groups, may be associated with lower reoperation rates and favorable return-to-sport results [3, 4]. Recovery after surgery depends on lesion type, tissue quality, operative technique, and adherence to rehabilitation, but the overall goal is pain relief, restoration of range of motion, recovery of strength, and safe return to daily and professional activity [4].

Conclusions

The presented cases show that SLAP lesion may remain unrecognized for a prolonged period when chronic shoulder pain is interpreted only as periarticular pathology. Late diagnosis leads to persistent pain, prolonged ineffective treatment, restriction of motion, reduction of physical and occupational activity, and risk of chronic functional impairment. In patients with refractory shoulder pain, especially when symptoms persist despite adequate conservative treatment or are accompanied by night pain and loss of function, earlier MRI-based assessment should be considered. Timely diagnosis followed by appropriate arthroscopic treatment and rehabilitation can substantially improve clinical outcome and functional restoration [3–5].

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