

ORIGINAL ARTICLE

**Correlation between physical examination and  
intraoperative findings in shoulder disease treated by  
arthroscopy. Statistical analysis of 150 patients** ☆



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**KEYWORDS**

Physical examination;  
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**Abstract**

*Introduction:* Only a few clinical exploratory manoeuvres are truly discriminatory and useful in shoulder disease. The aim of this study is to correlate the physical examination results of the shoulder with the true diagnosis found by arthroscopy.

*Methods:* A retrospective case series of 150 patients with the most common surgical conditions of the shoulder. Data were collected on the suspicion of each pathology, the physical examination of the patient, and the actual discovery of the disease during arthroscopic surgery. *Results:* The Bankart examination manoeuvres of the lesion show the best results, with a 92.1% positive prediction value (PPV), a 99.1% negative predictive value (NPV), followed by the impingement syndrome, with a PPV of 94.4%, and total cuff rupture with a PPV of 92.3%.

Exploration of the superior labrum anterior to posterior (SLAP) lesion had an NPV of 99.1%. *Conclusion:* Physical examination is sufficient to diagnose or rule out Bankart. A positive physical examination provides the complete rupture of the rotator cuff, and requires further studies. The patients suspected of subacromial syndrome only need an NMR if the physical tests are negative.

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The conclusions drawn from this work can have a significant impact on both cost savings (by reducing forward tests), and saving time in certain cases in which, after appropriate physical examination, surgery may be indicated without losing time in intermediate steps.

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## PALABRAS CLAVE

Exploración física;  
Hombro;  
Artroscopia;  
Análisis estadístico

## Correlación entre la exploración física y los hallazgos intraoperatorios de patología de hombro tratada mediante artroscopia. Análisis estadístico de 150 pacientes

### Resumen

**Introducción:** En la patología del hombro pocas son las maniobras exploradoras verdaderamente discriminatorias y útiles en la clínica. El objetivo de nuestro trabajo es correlacionar la exploración física del hombro con el diagnóstico real hallado por artroscopia.

**Métodos:** Estudio retrospectivo tipo serie de casos de 150 pacientes con las principales patologías quirúrgicas de hombro. Se recogieron datos de la sospecha de cada patología según la exploración física del paciente y el hallazgo real de las mismas durante la cirugía artroscópica.

**Resultados:** Las maniobras de exploración de la lesión de Bankart es la que ha obtenido mejores resultados con un valor predictivo positivo (VPP) del 92,1% y un valor predictivo negativo (VPN) del 99,1%, seguida por el síndrome subacromial con un VPP del 94,4%, la rotura total del manguito con un VPP del 92,3%.

La exploración en la lesión SLAP tiene un VPN de 99,1%.

**Conclusión:** La exploración física es suficiente para diagnosticar o descartar una lesión de Bankart. Una exploración física positiva es diagnóstica de rotura total del manguito de los rotadores y no requiere estudios complementarios. Los pacientes con sospecha de síndrome subacromial solo necesitarán una RM confirmatoria si los test físicos son negativos.

Las conclusiones extraídas del presente trabajo pueden tener una importante repercusión tanto en ahorro de costes (por reducción de pruebas complementarias), como por ahorro de tiempo en determinados casos en los que, tras la exploración física adecuada, se puede indicar cirugía sin necesidad de pasos intermedios.

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## Introduction and objectives

Shoulder pain is one of the most common reasons for consultation in everyday clinical practice. One of the most frequent shoulder lesions is the subacromial syndrome, the total and partial tear of the rotator cuff, acromial-clavicular arthropathy (AC), lesions that affect joint stability such as Bankart lesions, SLAP or Hill-Sachs, and tendinosis of the long head of the biceps (LHB).<sup>1</sup> Shoulder pain is estimated to have an incidence of 16–26%.<sup>2</sup> Its annual incidence is 15 new episodes for every 1000 patients seen in Primary Care, and in this context it is the third most common reason for consultation.<sup>3</sup> The incidence of tendon and joint lesions increases with age, as the soft tissues weaken and gradually degenerate; therefore, in the Netherlands, the incidence of subacromial syndrome stands at 19 for each 1000 individuals/year. It is higher in women older than 45 years old and lower in younger people.<sup>4</sup> LHB tendinosis is far more common in the adult population, and its overall incidence stands at from 29% to 66%.<sup>5</sup>

One cause of the increase in shoulder injuries is the rise in sports activities, and injury of the superior labrum from

anterior to posterior, or SLAP lesion, is one of the injuries most frequently resulting from the practice of sport. SLAP is a pathology that affects the labrum, a fibre-cartilage pad that increases the stability of the joint and contains the humeral head; the upper part of the labrum detaches from the glenoid fossa, largely due to repeated luxations. Its importance lies in the fact that it is a pathology directly associated with sport, and its incidence has increased exponentially over recent years, with a prevalence of about 3.9–11.8%.<sup>6</sup>

Respecting the rotator cuff, some bibliographical material states that physical exploratory tests achieve good sensitivity and specificity, with an overall precision of approximately 61–75%,<sup>7,8</sup> although no test alone has good discriminatory value.<sup>9</sup>

A meta-analysis by Hegedus et al. showed that very few exploratory shoulder manoeuvres seem to be discriminatory and therefore useful for a definitive diagnosis.<sup>10</sup>

Of all the pathologies which were evaluated, those of the labrum aroused the most enthusiasm among the researchers. Given these results, they concluded that it is particularly necessary to undertake high quality studies that

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