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TENODESIS DEL BICEPS MEDIANTE:

“LASSO LOOP” FACIL CON VISION  
DIRECTA

CONTROL ECOGRAFICO DE 20 CASOS CONSECUTIVOS

# introducción:

cuando todas son buenas...



¿Qué tenodesis elegir?





Pensad con sencillez y justicia, y hablad como pensáis.

(Benjamin Franklin)

# objetivo:

Valoración ecográfica de la fijación del tendón del bíceps en la posición alta de la corredera mediante técnica “lasso loop”

# material y metodo:

cronología: septiembre - diciembre 2013

muestra: 19 pacientes

12 mujeres y 7 hombres

edad media: 64 (48-72)

11 derechos y 9 izquierdos

indicación quirúrgica:

descompresión subacromial con tenodesis y  
con/sin sutura del manguito

## técnica quirúrgica:

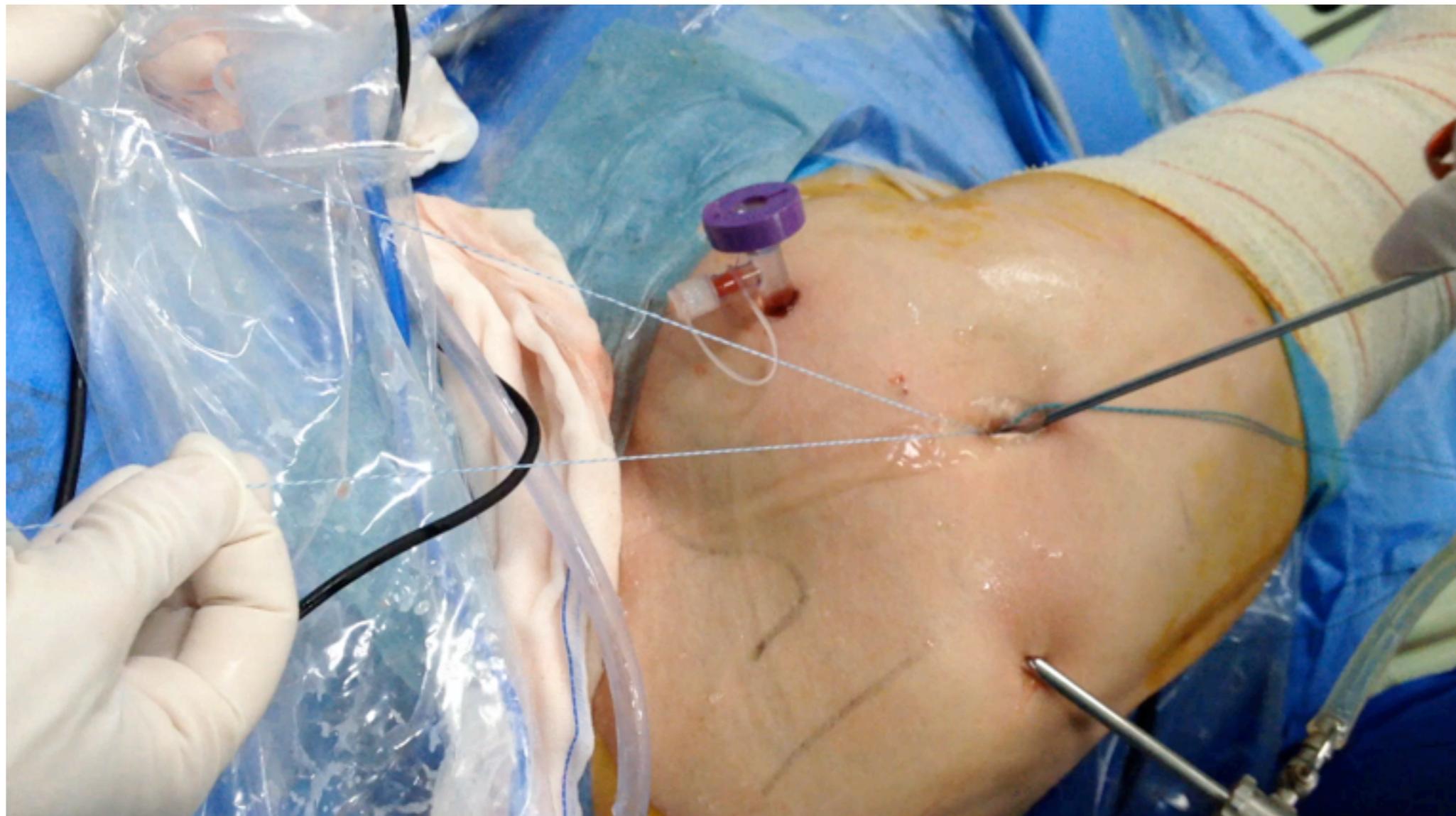
con visión artroscópica intracapsular posterior, se coloca un anclaje portando dos hilos

con una pinza “atrapa hilos” se realiza un nudo “lasso loop” sin maniobrar dentro de la articulación

técnica quirúrgica:



técnica quirúrgica:



técnica quirúrgica:



## técnica quirúrgica:

- se anuda convencionalmente
- se realiza la tenotomía del bíceps

## control ecográfico:

- intervalo cirugía - ECO: 3 meses (1 - 4)

- variables:

1- ocupacion de la corredera si/no

2 - presencia de liquido si/no

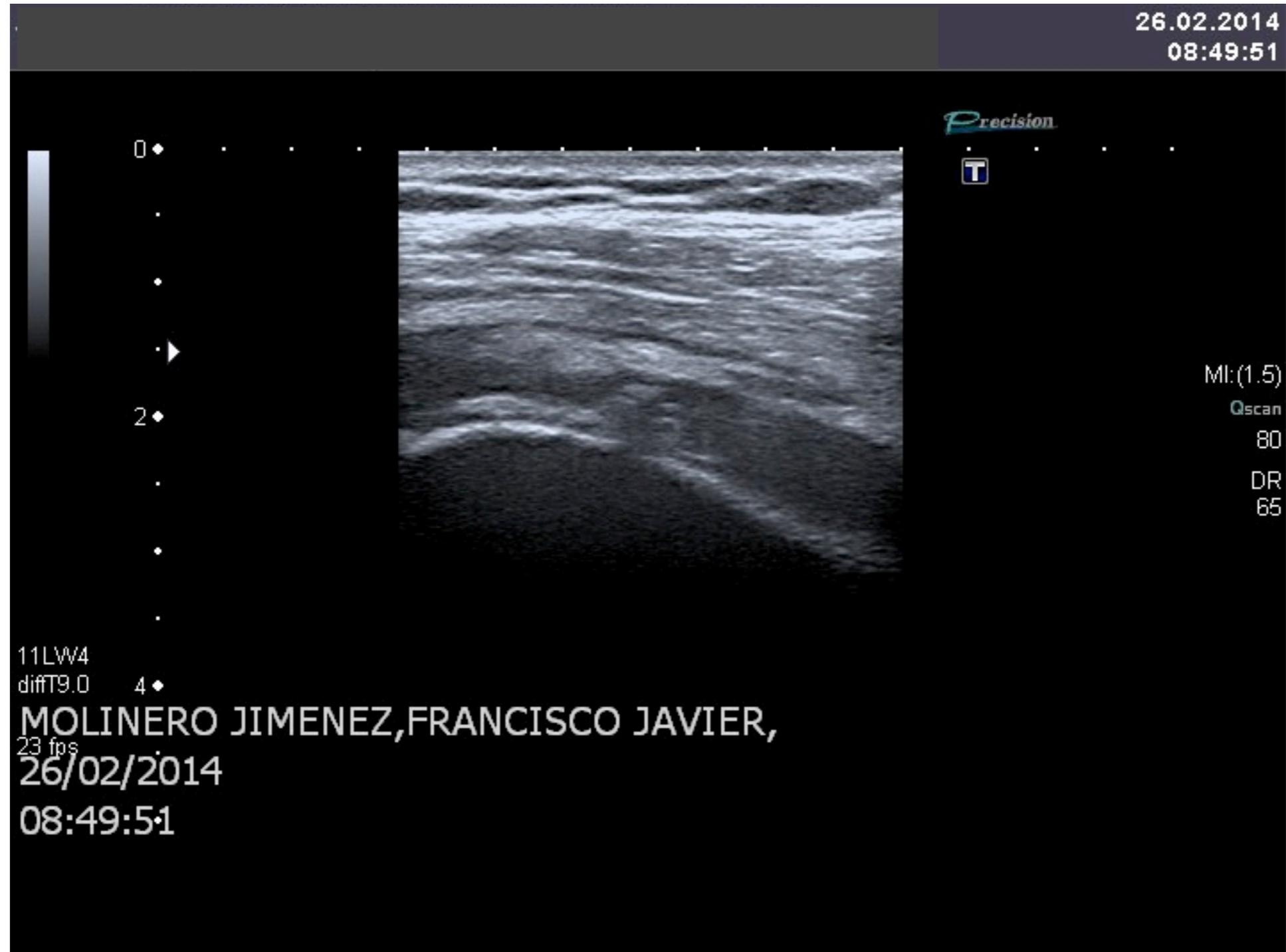
# resultados:

17/19 hombros

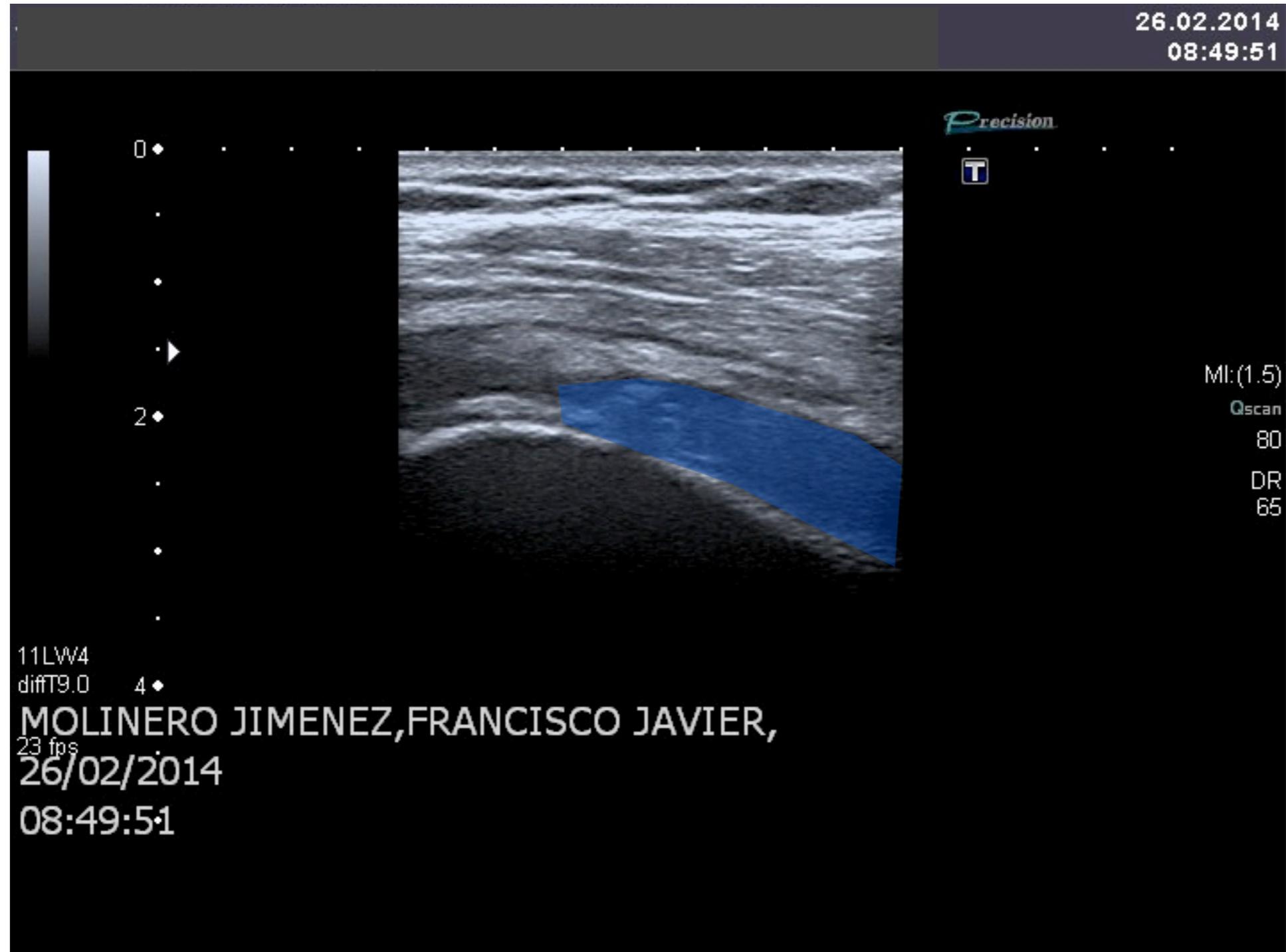
1- ocupacion de la corredera **si**/no

2 - presencia de liquido **si**/no

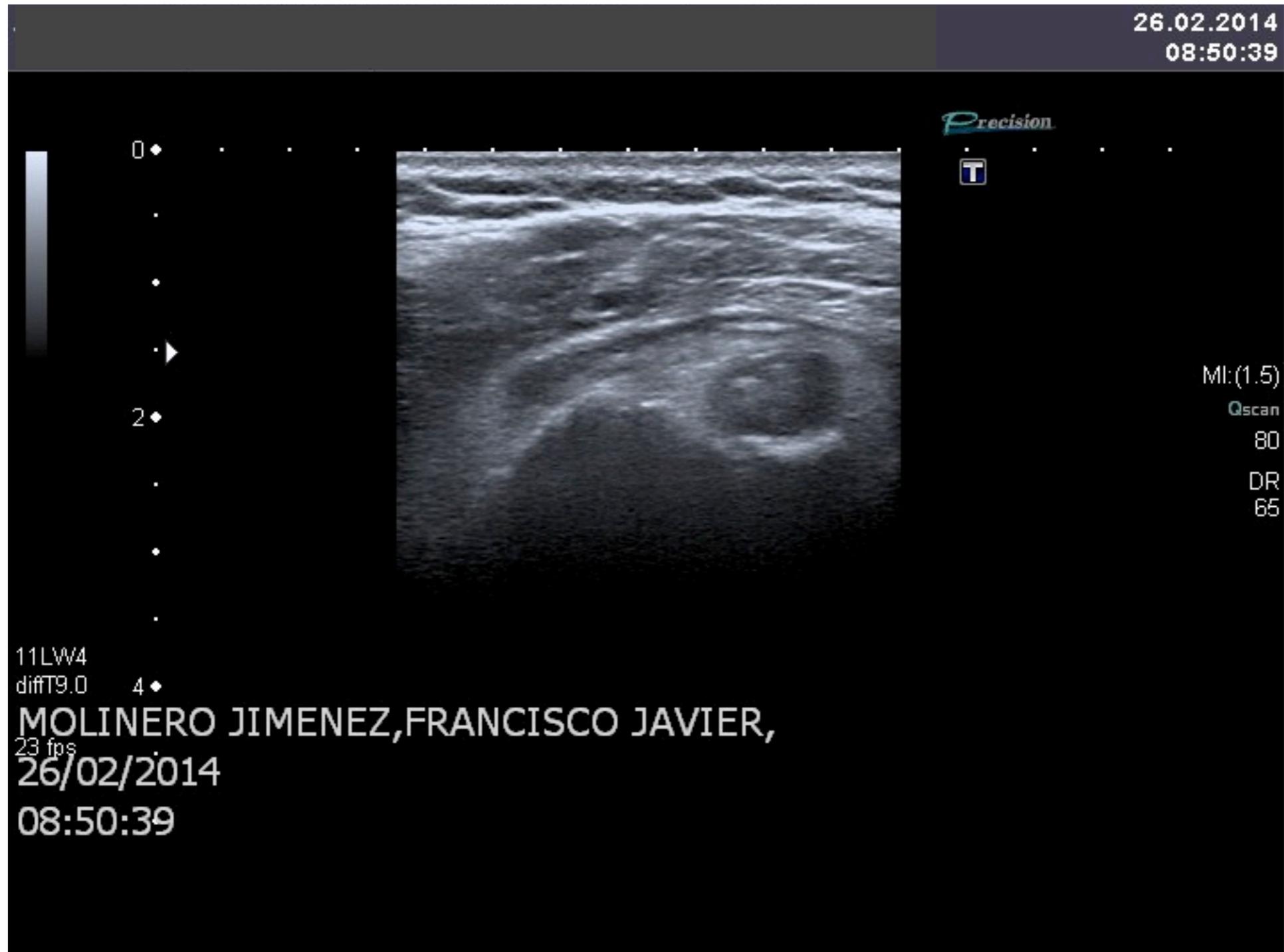
# visión longitudinal



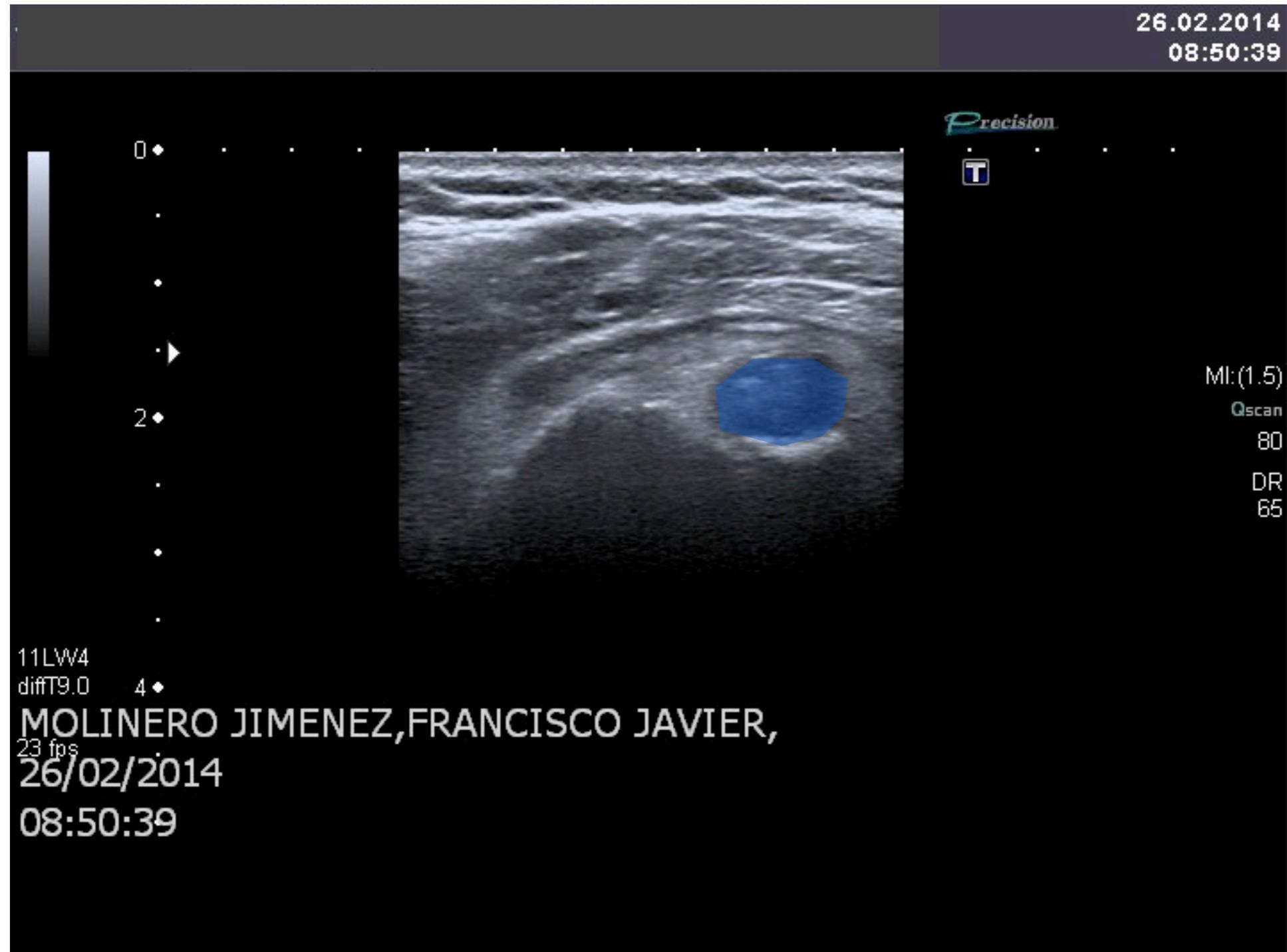
# visión longitudinal



# visión transversal



# visión transversal



# resultados:

1/19 hombros

1- ocupacion de la corredera **si/no**

2 - presencia de liquido **si/no**

1/19 hombros

1- ocupacion de la corredera **si/no**

2 - presencia de liquido si/no

discusión:

# tenotomía versus tenodesis

Knee Surg Sports Traumatol Arthrosc  
DOI 10.1007/s00167-013-2587-8

SHOULDER

## Tenotomy or tenodesis for long head biceps lesions in shoulders with reparable rotator cuff tears: a prospective randomised trial

Qiang Zhang · Jiaojiao Zhou · Heng'an Ge ·  
Biao Cheng

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### Abstract

**Purpose** Tenotomy and tenodesis are both effective for the treatment of long head biceps lesions. The aim of this study was to compare the clinical outcomes of the two procedures in patients older than 55 years of age affected by reparable rotator cuff tears with concomitant long head biceps pathologies.

**Methods** Patients older than 55 years of age with long head biceps lesions and reparable rotator cuff tears were selected for this study. A total of 151 patients were randomly assigned to the tenotomy group (77 patients) or the tenodesis group (74 patients). Arthroscopic rotator cuff repair was performed in all the patients. Before surgery, physical and radiological examinations were performed; the constant score was measured as well. After the operation, the surgical time, cost, pain (VAS scores), Popeye sign, cramping pain, constant scores, satisfaction level and the elbow flexion and forearm supination strength indices were recorded.

**Results** Patients were followed for an average of 24 months. No significant differences in the clinical results for the constant scores, the forearm supination and elbow flexion strength indices, Popeye sign, cramping pain and satisfaction level were found between the groups. However, tenotomy required a shorter surgical time ( $40.4 \pm 4.0$

vs.  $50.4 \pm 5.9$  min,  $P < 0.001$ ) and resulted in faster pain relief ( $3.1 \pm 1.8$  vs.  $4.8 \pm 1.9$ ,  $P < 0.001$ ).

**Conclusion** Both tenotomy and tenodesis are effective and equal for the treatment of long head biceps lesions. However, because tenotomy requires a shorter surgical time and results in faster pain relief, tenotomy may be more suitable for the treatment of long head biceps lesions in patients older than 55 years of age with reparable rotator cuff tears.

**Level of evidence** Therapeutic studies, Level I.

**Keywords** Long head of the biceps tendon · Tenotomy · Tenodesis · Rotator cuff

### Abbreviations

LHBT Long head of the biceps tendon  
SLAP Superior labrum anterior-posterior  
SI Strength index

### Introduction

The lesion of the long head of the biceps tendon (LHBT) is a common cause of anterior shoulder pain, which results in marked functional impairment. LHBT pathologies can be divided into inflammation, instability and traumatic lesions [4]. Although isolated biceps tendinitis has been described, LHBT pathologies more commonly present (in almost 95 % of the patients) in combination with other shoulder pathologies, mostly combined with rotator cuff tears in elderly patients [13, 23, 24, 27].

To date, no clearly defined treatment protocol for LHBT injuries has been established. However, there is a consensus that severe lesions should be treated with either

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# adherencia fibrosa es fiable

## Funnel Tenotomy Versus Intracuff Tenodesis for Lesions of the Long Head of the Biceps Tendon Associated With Rotator Cuff Tears

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Investigation performed at Shoulder and Elbow Clinic, Department of Orthopaedic Surgery, College of Medicine, Kyung Hee University, Seoul, Korea

**Background:** There is no clear consensus regarding optimal management of lesions of the long head of the biceps tendon (LHBT) associated with rotator cuff tears.

**Purpose:** To compare clinical outcome and cosmetic deformity of a funnel tenotomy versus intracuff tenodesis for concomitant LHBT lesion in patients with rotator cuff tears.

**Study Design:** Cohort study; Level of evidence, 3.

**Methods:** Patients who underwent surgical treatment for rotator cuff tears associated with LHBT lesions between March 2005 and February 2011 were enrolled in the study (N = 83). Forty-one underwent a funnel tenotomy (group A), and 42 underwent an intracuff tenodesis (group B). The mean age at the time of operation was 63.8 years in group A (range, 44-68 years) and 58.6 years in group B (range, 45-70 years).

**Results:** At the most recent follow-up, the mean University of California at Los Angeles (UCLA) score in group A improved from a preoperative mean of  $16.9 \pm 3.6$  to  $30.6 \pm 4.1$  ( $P < .001$ ), and the Constant score improved from  $58.7 \pm 14.2$  to  $73.8 \pm 11.2$  ( $P < .001$ ). In group B, these scores improved from  $18.1 \pm 4.0$  to  $31.3 \pm 3.0$  ( $P < .001$ ) and  $53.6 \pm 13.4$  to  $74.8 \pm 11.9$  ( $P < .001$ ), respectively. There were no statistically significant differences between the 2 groups ( $P = .43$  for UCLA,  $P = .81$  for Constant score). Popeye deformity was detected in 11 cases of group A (26.8%) and in 7 cases of group B (16.7%) ( $P = .06$ ).

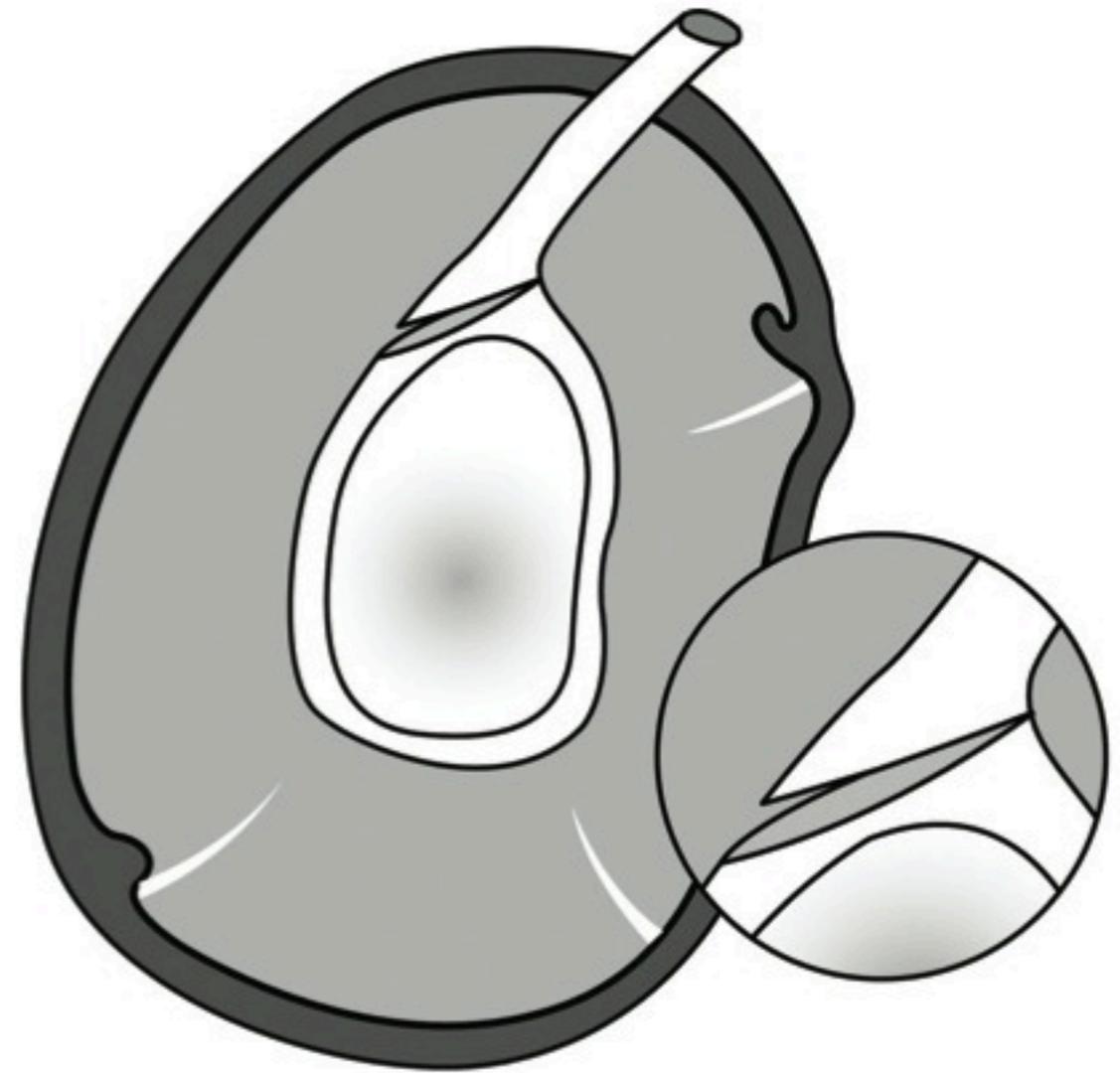
**Conclusion:** For the treatment of concomitant LHBT lesions in patients with rotator cuff tears, both a funnel tenotomy and an intracuff tenodesis showed good clinical outcomes. Even though the incidence of Popeye deformity in the funnel tenotomy group tended to be higher, there was no significant difference in the overall incidence of cosmetic deformity between the 2 groups.

**Keywords:** shoulder; rotator cuff tear; biceps lesion; tenotomy; tenodesis; funnel; intracuff

Rotator cuff tears may produce more pressure and friction on the biceps tendon, resulting in the high risk for lesions of the long head of the biceps tendon (LHBT).<sup>1,2</sup> Accordingly, rotator cuff tears are often associated with lesions of the LHBT. These lesions can cause significant shoulder pain and dysfunction. They may vary in degree, ranging from minor tendinitis to a complete rupture.<sup>3</sup> Although

the function of the LHBT remains uncertain, it has been described as a humeral depressor, a shoulder stabilizer, and a vestigial structure.<sup>4,5,23,25,26</sup>

A tenotomy or tenodesis has been considered the preferred treatment for an LHBT lesion present with a rotator cuff tear.<sup>6,26</sup> A tenotomy is a simpler technique. It can shorten the operation time and simplify the rehabilitation after the surgery; therefore, it can achieve a faster return to activity. But a tenotomy is disadvantageous in that it commonly produces such problems as cosmetic deformity and biceps weakness resulting from the distal migration of tenotomized proximal tendon and the distal retraction of biceps muscle. Popeye deformity occurs at a reported incidence of 3% to 70%.<sup>13,17,21</sup> Some authors preferentially use a tenodesis because a tenotomy causes such problems as cosmetic defect, cramping, fatigue pain, and biomechanical changes of the humeral head.<sup>6,13</sup> However, a tenodesis is disadvantageous in that it is a technically more difficult procedure and requires a prolonged operation time. In



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# “soft tissue “ tenodesis: más fisiológica

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ORIGINAL ARTICLE

## Biomechanical strain characteristics of soft tissue biceps tenodesis and bony tenodesis

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Charley Liu · Yue Li · Yupeng Ren ·  
Nirav A. Shah · Li-Qun Zhang

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### Abstract

**Background** Biomechanical analysis of biceps tenodesis procedures has historically focused on load to failure models. Minimal data exists for the analysis of biomechanical strain properties of the biceps tendon in a sub-failure, physiologic cadaver model.

**Hypothesis** Tendon strain characteristics are different between bony and soft tissue tenodesis surgery, and the soft tissue tenodesis procedure reproduces a strain pattern more similar to the native biceps tendon.

**Methods** Eight fresh frozen cadaver upper extremities were mounted onto a custom device that controls shoulder abduction and rotation. Strain on the tendon was measured using a differential variable reluctance transducer as the

arm was moved through cycles of abduction and external rotation. Each arm was mounted once, and all 3 testing procedures were performed on each of the 8 specimens. Statistical analysis was completed using ANOVA, followed by multiple comparisons with Bonferroni correction. **Results** The bony tenodesis model placed higher strain on the biceps tendon than the soft tissue tenodesis ( $p = 0.025$ ). Also, the bony tenodesis model increased the strain on the biceps tendon when compared to the native tendon ( $p = 0.031$ ). In contrast, the soft tissue tenodesis did not significantly alter strain when compared to the native tendon ( $p = 0.089$ ).

**Conclusion** The soft tissue tenodesis procedure better maintained the native strain environment when compared to the bony tenodesis using an interference screw. Due to this closer approximation of native biceps tendon biomechanics, the soft tissue procedure may be more preferable clinically than the bony tenodesis.

**Level of Evidence:** 1, Controlled Laboratory Study.

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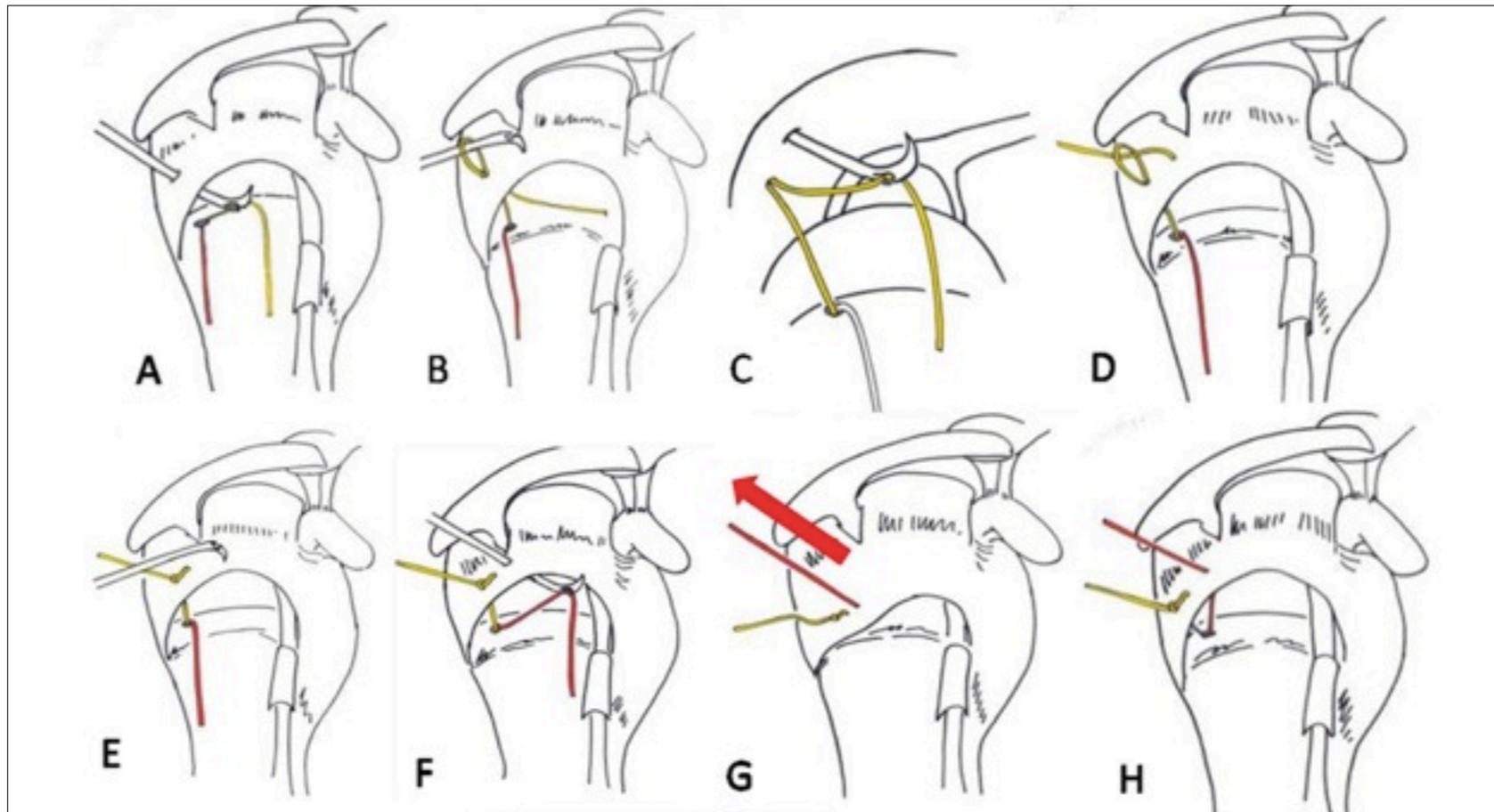
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### Introduction

Tendon pathology in the long head of the biceps brachii is a source of significant pain that can have debilitating effects on the shoulder. Patients with chronic biceps tendon pain secondary to lesions recalcitrant to conservative measures often require surgery for definitive treatment. Debate exists over whether tenotomy or tenodesis is a more effective treatment, and multiple clinical studies have attempted to address this [1, 2]. Fatigue discomfort, strength loss, and a Popeye sign have led some surgeons to recommend tenodesis [3, 4].

A number of soft tissue and bony tenodesis surgical techniques have demonstrated favorable outcomes [5–10].

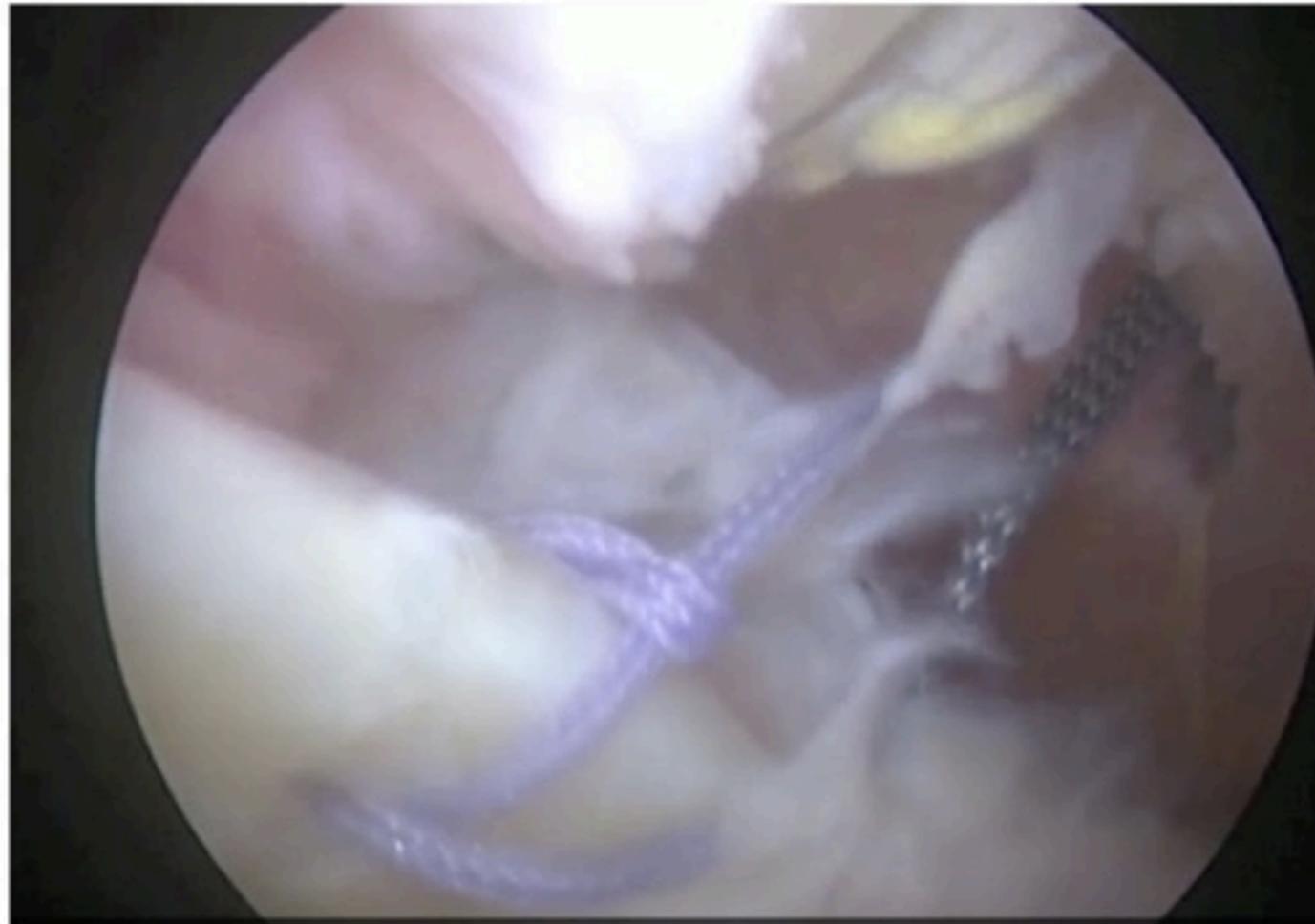
# lasso loop



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“lasso loopp” con visión directa



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gracias por su atención



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