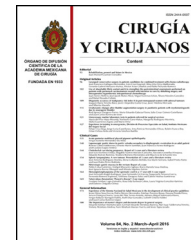




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ORIGINAL ARTICLE

New arthroscopic portal for performing tenotomy/tenodesis procedures on the long head of the biceps brachii tendon[☆]



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Received 17 April 2015; accepted 10 September 2015

Available online 4 July 2016

KEYWORDS

Anatomy;
Shoulder;
Arthroscopy;
Portal;
Biceps;
Tenotomy;
Tenodesis

Abstract

Background: Shoulder arthroscopy is the standard technique for performing procedures involving the intertubercular groove. Current techniques continue to produce excessive soft tissue manipulation and neurovascular injury.

Materials and methods: A cross-sectional, observational and descriptive study was conducted on a cohort of 24 shoulders following the standard surgical protocol and using punch dissection. The neurovascular structures with risk of damage by the standard lateral portal were evaluated during the study to establish a secure area for a new arthroscopic portal. Finally, the safety of the new proposed site was evaluated.

Results: The presence of 24 venous structures, with a mean diameter was 1.05 mm (SD: 0.71) was documented. A tendency was observed in locating these structures in the lower half of the dissecting field for the left shoulders and a hypovascular area between the 7 and 10h circle dissected relative to the right shoulder. The new site was determined at a point 1.5 cm anterolateral to the anterolateral border of the acromion at an angle of 60° to the horizontal axis of the acromion and towards the intertubercular groove of the humerus.

[☆] Please cite this article as: Gutiérrez-de la O J, Espinosa-Uribe AG, Morales-Avalos R, Vílchez-Cavazos F, Elizondo-Omaña RE, Guzmán-López S. Nuevo portal artroscópico para la realización de procedimientos de tenotomía/tenodesis del tendón de la cabeza larga del músculo bíceps braquial. *Cirugía y Cirujanos*. 2016;84:293–300.

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PALABRAS CLAVE

Anatomía;
Hombro;
Artroscopia;
Portal;
Bíceps;
Tenotomía;
Tenodesis

Conclusions: The methodology used in this study is innovative, reproducible and applicable for the study of all existing shoulder arthroscopic portals procedures, as well as any joint. The results provided by this study will be helpful for clinicians to improve tenotomy/tenodesis procedures of the long head of the biceps brachii tendon.

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Nuevo portal artroscópico para la realización de procedimientos de tenotomía/tenodesis del tendón de la cabeza larga del músculo bíceps braquial

Resumen

Antecedentes: La artroscopia de hombro constituye la técnica de elección para los procedimientos que involucran el surco intertuberositario. Las técnicas actuales continúan produciendo una manipulación excesiva de tejidos blandos y daño a estructuras neurovasculares.

Materiales y métodos: Estudio cohorte trasversal, observacional y descriptivo. Se evaluaron 24 hombros, siguiendo el protocolo quirúrgico estándar y utilizando disección en sacabocado. Durante el estudio se evaluaron las estructuras neurovasculares en riesgo próximas al portal lateral estándar, para establecer un área segura en base a la cual se estableció el nuevo portal artroscópico. Por último, se evaluó la seguridad del nuevo portal.

Resultados: Documentamos la presencia de 24 estructuras venosas próximas al portal lateral estándar, cuyo diámetro promedio fue de $1.05 \text{ mm} \pm 0.71$. Se observó una tendencia a localizar estas estructuras en la mitad inferior del campo de disección para hombros izquierdos, así como un área hipovascular entre las 7 y las 10 h respecto al círculo disecado, para los hombros derechos. El nuevo portal se determinó en un punto localizado 1.5 cm anterolateral al borde anterolateral del acromion con una angulación de 60° respecto al eje horizontal del acromion y en dirección al surco intertuberositario del húmero.

Conclusiones: La metodología utilizada en el presente estudio es innovadora, reproducible y aplicable para el estudio de todos los portales artroscópicos existentes en el hombro y en general en cualquier articulación. Los resultados proporcionados por este estudio serán de ayuda para el clínico, para mejorar los procedimientos de tenotomía/tenodesis del tendón de la cabeza larga del músculo bíceps braquial.

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Background

In recent years shoulder arthroscopy has become the technique of choice for surgical procedures to the shoulder.¹ Its results in the treatment of shoulder instability and rotator cuff injury are comparable to open procedures, but with far lower morbimortality.²

The prevalence of injuries to the long head of the biceps brachii tendon is estimated at 25 cases per 100,000 inhabitants in the general population.³ This prevalence is higher in people of the third age, and medium and high performing athletes.³ Recent studies estimate that it will increase in years to come, due to the demographic transition taking place in the Western world.³

The long head of the biceps brachii tendon is often the source of shoulder pain, due to the great variety of pathological changes that can affect it.⁴⁻⁶ Surgical treatment of these conditions can be limited to the surgical removal of the intra-articular portion of the tendon (tenotomy), followed or otherwise by its reinsertion using different materials

to another portion of bone, usually in the intertubercular groove of the humerus (tenodesis).⁶⁻⁸ This technique is currently the subject of debate amongst orthopaedic surgeons worldwide.⁹

Techniques with the current minimally invasive portals, for performing tenotomy/tenodesis procedures on the long head of the biceps brachii tendon continue to involve excessive manipulation of the soft tissues and are frequently a cause of local and regional complications to the area. No portal has been described as yet which fulfils the characteristics of visualisation, safety and access to the intertubercular groove. A new arthroscopic portal is required which will enable precise visualisation of the long head of the biceps brachii tendon in the intertubercular groove of the humerus; this would minimise the dissection of soft tissues during these procedures on the long head of the biceps brachii tendon.

The objective of this study was to anatomically determine a new potential arthroscopic portal, in order to perform tenotomy/tenodesis procedures to the long head

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