

ORIGINAL ARTICLE

Endoscopic treatment of sciatic nerve entrapment in deep gluteal syndrome: Clinical results[☆]



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KEYWORDS

Gluteal space;
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Abstract

Introduction: Deep gluteal syndrome (DGS) is characterised by compression, at extra-pelvic level, of the sciatic nerve within any structure of the deep gluteal space. The objective was to evaluate the clinical results in patients with DGS treated with an endoscopic technique.

Methods: Retrospective study of patients with DGS treated with an endoscopic technique between 2012 and 2016 with a minimum follow-up of 12 months. The patients were evaluated before the procedure and during the first year of follow-up with the WOMAC and VAIL scales.

Results: Forty-four operations on 41 patients (36 women and 5 men) were included with an average age of 48.4 ± 14.5 . The most common cause of nerve compression was fibrovascular bands. There were two cases of anatomic variant at the exit of the nerve; compression of the sciatic nerve was associated with the use of biopolymers in the gluteal region in an isolated case. The results showed an improvement of functionality and pain measured with the WOMAC scale with a mean of 63–26 points after the procedure ($p < 0.05$). However, at the end of the follow-up, one patient continued to manifest residual pain of the posterior cutaneous femoral nerve. Four cases required revision at 6 months following the procedure due to compression of the scarred tissue surrounding the sciatic nerve.

Conclusion: Endoscopic release of the sciatic nerve offers an alternative in the management of DGS by improving functionality and reducing pain levels in appropriately selected patients.

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PALABRAS CLAVE

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profundo;
Endoscopia

Manejo endoscópico del atrapamiento del nervio ciático en el síndrome de glúteo profundo: resultados clínicos

Resumen

Introducción: El síndrome de glúteo profundo (SGP) es una enfermedad caracterizada por la compresión a nivel extra-pélvico del nervio ciático (NC) por cualquier estructura en el espacio glúteo profundo. El objetivo de este estudio fue evaluar los resultados clínicos en pacientes con SGP manejados con técnica endoscópica.

Métodos: Estudio retrospectivo de pacientes con SGP intervenidos con técnica endoscópica entre 2012 al 2016 con seguimiento mínimo de 12 meses. Los pacientes fueron evaluados antes de la intervención y durante el primer año de seguimiento con las escalas WOMAC y VAIL.

Resultados: Se incluyeron 44 cirugías en 41 pacientes (36 mujeres y 5 varones) con un promedio de edad de $48,4 \pm 14,5$ años. La causa más frecuente de atrapamiento fueron las bandas fibrovasculares, hubo 2 casos de variante anatómica en la salida del nervio, y en un caso aislado, el atrapamiento del NC fue atribuido a la aplicación de biopolímeros en la región glútea. Se encontró mejoría de la funcionalidad y dolor valorado con la escala WOMAC con una mediana de 63 a 26 puntos después de la intervención ($p < 0,05$). Al final del seguimiento un paciente continuaba con dolor residual del nervio cutáneo femoral posterior. Cuatro casos requirieron de revisión a los 6 meses posteriores al procedimiento, por atrapamiento de tejido de cicatrización alrededor del NC.

Conclusión: La liberación endoscópica del NC es una alternativa en el manejo del SGP al mejorar la función y disminuir el grado de dolor, cuando existe una adecuada selección de pacientes.

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Introduction

Deep gluteal syndrome (DGS) is characterised by compression, at extra pelvic level, of the sciatic nerve (SN) within any structure of the deep gluteal space (DGS).¹ The DGS is defined in front by the femoral neck, from behind by the posterior edge of the gluteus muscles, on the side by the rough line of the femur and medially by the sacrotuberous ligament and the falciform fascia (Fig. 1). The predominating symptom is the inability to remain seated for prolonged periods of time, in addition to radiating pain down the affected leg. There are several aetiological factors for the development of DGS, including: direct trauma at gluteal or pelvic level, hypertrophy of the muscles in the deep region of the DGS, haematoma, and anatomical variants where the SN exits with respect to the pyriform muscles and fibrovascular bands.¹⁻⁵

DGS continues to be difficult to diagnose in the treatment for the orthopaedic surgeon. This delays its identification, affecting the patient's quality of life. Diagnosis of DGS is made when there is clinical suspicion due to medical history and symptoms presented by the patient on physical examination in the absence of any lumbar condition.

Some manoeuvres exist which may help the physician to define diagnosis, including passive and active stretch tests of the piriformis muscle. These, together with infiltration of the DGS, highlight clinical suspicion.⁶

DGS treatment is initially conservative with physical therapy, which focuses on stretching all the tissues around the DGS, so as to move the anatomical structures at greatest risk of entrapment, such as the fibrovascular bands.⁷ This manoeuvre achieves a favourable outcome in over 87% of

patients. However, a percentage of patients do not respond satisfactorily to this type of treatment.¹

Surgery is considered for patients for whom the conservative approach has failed after a minimum period of 3 months, and both open surgery and endoscopic technique options have been described. The endoscopic approach lowers the risk of injury to the nearby structures by direct visualisation of the nerve, as well as reducing risk of infection and lesions, offering favourable outcomes with an improvement in patient pain level and functionality.^{1,8-12} The purpose of this study was to describe the clinical results in patients with DGS managed by endoscopy.

Methods

A retrospective study of patients diagnosed with DGS, treated with an endoscopic technique. The operations included took place between the years 2012 and 2016 with a minimum follow-up of 12 months. During the study period, 47 patients were operated on, and of these, 44 met with the selection criteria. Subjects under 18 and those with prior pelvis or hip operations were excluded. All procedures were performed by the same surgeon. This study was approved by the Research Institution Ethics Committee.

As part of the management protocol, a detailed medical history was made, describing the onset of symptoms, trauma background and previous operations. The diagnosis process is described in Fig. 2. Radiological studies included anterior-posterior projections (AP) of the pelvis, Dunn 45° and 90°, Lequesne false profile, as well as a magnetic resonance (MR). The MR of the lumbosacral spine was indicated

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