



NEW TECHNIQUES AND TECHNOLOGIES

Robot-assisted pudendal neurolysis in the treatment of pudendal nerve entrapment syndrome[☆]



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KEYWORDS

Neurolysis;
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Abstract

Introduction: Pudendal nerve entrapment syndrome (PNE) is characterized by the presence of neuropathic pain in the pudendal nerve (PN) territory, associated or not with urinary, defecatory and sexual disorders. Surgical PN decompression is an effective and safe alternative for cases when conservative treatment fails. The aim of this study is to describe the first robot-assisted pudendal neurolysis procedure performed in our country.

Material and methods: We describe step by step the technique of robot-assisted laparoscopic neurolysis of the left PN performed with intraoperative neurophysiological monitoring on a 60-year-old patient diagnosed with left PNE.

Results: The procedure was performed satisfactorily without complications. After 24 h, the patient was discharged from the hospital. We observed a 50% reduction in pain measured using the visual analog scale 2 weeks after the procedure, which remained after 10 weeks of the neurolysis.

Conclusions: Robot-assisted neurolysis of the PN constitutes a feasible and safe approach, enabling better visualization and accuracy in the dissection of the PN. Intraoperative neurophysiological monitoring is useful for locating the PN and for detecting intraoperative changes after the release of the nerve.

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PALABRAS CLAVE

Neurólisis;
Nervio pudendo;
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Neurólisis robótica del pudendo en el tratamiento del síndrome de atrapamiento del pudendo

Resumen

Introducción: El síndrome de atrapamiento del pudendo (SAP) se caracteriza por la presencia de dolor de características neuropáticas en el territorio del nervio pudendo (NP) asociado o no a alteraciones miccionales, defecatorias y sexuales. La descompresión quirúrgica del mismo constituye una alternativa eficaz y segura en los casos de fracaso de tratamiento conservador. El objetivo es describir el primer procedimiento de neurólisis robótica del pudendo realizada en nuestro país.

Material y métodos: Se describe paso a paso la técnica de neurólisis laparoscópica asistida por robot del NP izquierdo realizada con monitorización neurofisiológica intraoperatoria en una paciente de 60 años de edad a quien se diagnosticó SAP izquierdo.

Resultados: El procedimiento se realizó de forma satisfactoria sin complicaciones. Tras 24 h se procedió al alta hospitalaria. Se objetivó una reducción del dolor del 50% medida mediante Escala Visual Analógica a las 2 semanas del procedimiento, mantenida tras 10 semanas de la neurólisis.

Conclusiones: La neurólisis robótica del NP constituye una vía de abordaje factible y segura, permitiendo una mejor visualización y precisión en la disección del NP. La monitorización neurofisiológica intraoperatoria es útil para la localización del NP y para la detección de cambios intraoperatorios tras la liberación del nervio.

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Introduction

The pudendal nerve entrapment syndrome (PNE), defined by the presence of pain in the territory of the pudendal nerve (PN), associated or not with voiding, defecation, or sexual alterations, is described by Amarenco in 1987.¹

The PN is a mixed nerve (20% motor fibers, 30% autonomic fibers, and 50% sensory fibers) that has a complex anatomy with 3 branches: inferior rectal nerve (sensitivity of the anal canal, inferior rectal and posterior skin of the perivulvar and perineal zone), perineal nerve (sensitivity of the lower third of the vagina, urethra, major and minor lips) and dorsal nerve of the penis/clitoris (sensitivity of the perineal and genital skin).² The PN is responsible for the innervation of the external anal sphincter, levator ani, bulb and ischiocavernosus, striated urethral sphincter, and deep and superficial perineal muscles. The autonomic activity is responsible for the erection and bladder sensitivity. The central origin is found in the sacral roots S2, S3 and S4.³

The PNE is secondary to compression of the PN at different levels: ischial spine, between the sacrospinous ligament and the sacrotuberous one, Alcock's canal, or piriformis muscle.⁴ The ignorance of this syndrome, and the variety of symptoms derived from it, entails a mean diagnostic delay of 4 years.⁵

The diagnosis is established clinically according to the Nantes criteria,⁶ there being no pathognomonic radiological or electrophysiological findings. Recently, MRI neurography was postulated as an imaging technique for the diagnosis of PNE. The neurography is planned from L4-L5 to the root of the thigh, showing an increase in the thickness of the nerve and signal in T2 during the acute phase, while in the chronic phase, a decrease in the gauge of the PN and the

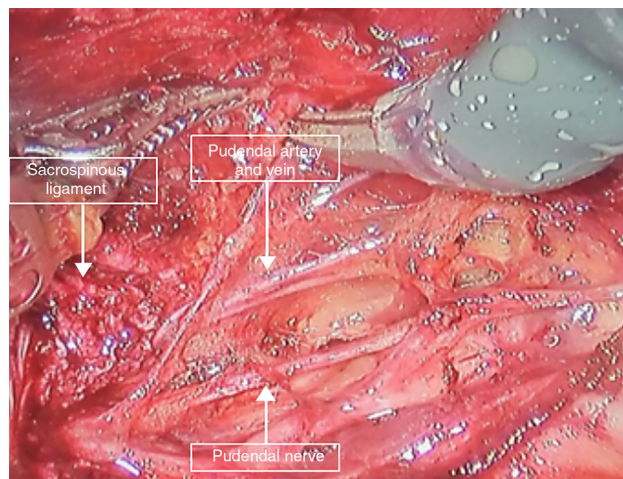


Figure 1 Dissection of left pudendal nerve, artery and vein.

signal in T2 secondary to fibrosis is observed. Occasionally, the only findings are indirect signs such as PN-dependent muscle edema during the acute phase or decreased muscle mass and increased signal in T1 due to the replacement of muscle tissue with adipose tissue in the chronic phase.^{7,8}

The decompression of PN has proved to be an effective and safe treatment in the PNE, and it can be performed by different approaches: transvaginal, transgluteal, transperineal, or transperitoneal laparoscopic. The objective of this work is to describe the first procedure of robotic neurolysis of PN performed in our country and to review the reported results of the different approaches to the surgical treatment of this pathology.

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