

LAPAROSCOPIC IMPLANTATION OF ELECTRODES FOR BILATERAL NEURMODULATION OF THE PUDENDAL NERVES AND S3 NERVE ROOTS FOR THE TREATMENT OF PELVIC PAIN AND VOIDING DYSFUNCTION

Introduction

The laparoscopic implantation of neuromodulation electrodes was first described in 2007[1] and allows for selective neuromodulation of virtually any intrapelvic nerve. It is also known that the neuromodulation of the pudendal nerve shows better results than S3 in patients with pelvic pain[2].

Based on that, the objective of this video is to describe the technique for laparoscopic implantation of electrodes for bilateral neuromodulation of S3 and pudendal nerves, by means of reporting a successful case.

Design

The patient is a 48 year-old woman with a 14-year history of intense acyclic pelvic pain, which worsened during micturition and on the minutes following it. She also complained of urinary hesitation and intermittent flow, frequently demanding her 15 minutes to complete voiding.

The patient was submitted to two implantation of sacral neuromodulators, seven and four years before our consultation. Only mild improvement of pain and bladder contractility was observed after them. She also complained of dysmenorrhea since menarche and hypermenorrhagia over the year before consultation.

On vaginal examination, painful overactivity of pelvic floor muscles was observed and more severe on the left side.

Urodynamics revealed detrusor hypocontractility and detrusor-sphincter incoordination.

Our first treatment attempt was to work on the electrical parameters of the already implanted neuromodulators, which promoted only mild improvement of pain and hesitation. The patient was referred to physical therapy, which was ineffective at reducing myofascial pain. After that, botulinum toxin injection of pelvic floor trigger points was attempted with no success.

During this period, the impedance between Interstim electrodes poles progressively increased, making all poles combinations ineffective. The explantation of the two neuromodulators followed by the laparoscopic implantation of electrodes for bilateral neuromodulation of S3 and pudendal nerves was then indicated.

The procedure began with the removal of the two Interstims. A laparoscopic hysterectomy was performed with the hypothesis of adenomyosis, to treat the hypermenorrhagia.

The dissection of the sacral plexus begins with the development of the obturator fossa, leading to the lumbosacral trunk and the sciatic and pudendal nerves.

Identification is confirmed with intraoperative neurostimulation, causing perineal contraction on the pudendal nerve and plantar flexion of the hallux on S3. A quadripolar electrode is inserted into the Alcock's canal and attached to the pelvic pectineal line. Another lead is placed juxtaneurally to S3. The leads contacts are then exteriorized and the peritoneum is closed. The same procedure was performed on the left side.

The leads were then connected to a 16-pole rechargeable pulse generator.

Results

On post-operative evolution, the patient developed an acute thrombosis of the external iliac artery, which was treated endovascularly.

Complete resolution of pain was observed with simultaneous S3 and pudendal stimulation and pudendal stimulation is turned off for voiding.

Conclusion

The laparoscopic implantation of neuromodulation electrodes allows for simultaneous stimulation of S3 and pudendal nerves, allowing for more programming options and possibly increasing success rates in complex pelvic floor dysfunction cases.

References

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Disclosures

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