Surgical Treatment of Intractable Pelvic, Groin, and Perineal Neuropathic Pain in a Gynaecologic Patient: Triple Neurectomy

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Abstract

Background: Gynaecologists who are asked to assess patients with pain in the genital area are not generally trained to consider neurogenic causes for the pain, nor are they generally familiar with the surgical procedures that can eliminate this pain.

Case: A 54-year-old woman who had undergone multiple laparotomies for Caesarean section, abdominal hysterectomy, treatment of ovarian cysts, and lysis of adhesions through a transverse abdominal approach presented with a seven- to eight-month history of severe neuropathic left-sided groin, labial, and perineal pain. Neurectomy involving the iliohypogastric, ilioinguinal, and genitofemoral nerves was performed. Postoperatively the patient experienced complete resolution of the pain.

Conclusion: Neuropathic pain should be considered in the differential diagnosis of women with an extensive history of lower abdominal surgery. Neurectomy is an effective treatment for this.

Résumé

Contexte : Les gynécologues à qui l'on demande d'évaluer des patientes qui présentent des douleurs affectant les organes génitaux ne disposent généralement pas de la formation qui leur permettrait de tenir compte des causes neurogènes de la douleur; d'ordre général, les interventions chirurgicales permettant d'éliminer cette douleur ne leur sont également pas familières.

Cas : Une femme de 54 ans qui avait subi de multiples laparotomies (césarienne, hystérectomie abdominale, prise en charge de kystes ovariens et libération d'adhérences) par l'intermédiaire d'une approche abdominale transversale connaissait de graves douleurs neuropathiques inguinales, labiales et périnéales affectant le côté gauche depuis 7-8 mois. Une neurectomie visant les nerfs ilio-hypogastrique, ilio-inguinal et génitocrural a été menée. À la suite de l'intervention, la patiente en est venue à connaître une résolution totale de la douleur.

Conclusion : La présence de douleurs neuropathiques devrait être envisagée dans le cadre du diagnostic différentiel chez les femmes qui présentent des antécédents importants de chirurgie abdominale basse. La neurectomie constitue alors un traitement efficace.

Key Words: Neuropathic pain, triple neurectomy, post-laparotomy chronic pain

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INTRODUCTION

Chronic groin pain is an uncommon postoperative complaint. It occurs most commonly following inguinal hernia repair,[1,2] but has also been reported following retropubic midurethral sling procedures.[3,4] It is classified as neuropathic or non-neuropathic. Non-neuropathic pain is believed to be caused by mesh-related fibrosis or postoperative fibrosis.[2] The syndrome of neuropathic groin pain is associated most closely with surgical procedures performed in the area traversed by the ilioinguinal, genitofemoral, and iliohypogastric nerves. The most common etiology is hernia surgery, particularly when it is performed using mesh products.[1,2]

Gynaecologists are familiar with neuropraxia following low transverse laparotomies; this is a condition presenting most commonly as numbness inferior to the incision line. This symptom resolves for most patients over the course of several months. It is much less common for a patient to present with intractable pain as a consequence of these procedures. Gynaecologists are for the most part not trained to consider a neurological etiology for pain and are not equipped with the surgical repertoire to treat the problem.

The sensory innervation of the groin, vulva, and perineal area in women is provided by three nerves: the ilioinguinal, genitofemoral, and iliohypogastric nerves. These nerves originate from the 12th thoracic and the first and second lumbar nerve roots. The ilioinguinal nerve arises from the 12th thoracic and the first lumbar nerve roots. It enters the groin through the transversus abdominus muscle medial to the anterior superior iliac spine (ASIS), follows the round ligament just inferior to the external oblique aponeurosis, and exits the external inguinal ring to supply sensory innervation to the inguinal region, the labia majora, and the upper medial aspect of the thigh. The iliohypogastric nerve arises from the same nerve roots and enters the groin through the transversus abdominus above the ilioinguinal nerve and crosses the groin in the anatomical cleavage plane between the external and internal oblique layers. It provides sensory innervation to the same areas as the ilioinguinal nerve. The genitofemoral nerve originates from the first and second lumbar nerve roots. The genital branch enters the inguinal canal through the deep inguinal ring and travels along the round ligament to end in the skin of the labia majora. It is well recognized that there can be great variation in the course of these nerves.[1]

Neuropathic pain in the areas served by these nerves can be caused when one or more of the nerves are compressed by fibrosis (scar tissue) or by suture materials or when the nerve itself is partially or completely transected.[2] Nerve injuries can lead to traumatic neuroma formation. While in many cases the symptoms are self-limited, neuropathic pain can be persistent and become very debilitating. In cases of intractable pain unresponsive to non-surgical treatment, surgical excision of the nerves is indicated.

There is no clear consensus on the criteria for establishing the etiology of chronic neuropathic pain. The symptoms associated with neuropathic pain include a burning sensation, hyperesthesia, and radiation of the pain into the labia majora, Scarpa's triangle, and upper medial thigh.[5] The pain may be triggered or aggravated by walking, stooping, and hyperextension of the hip. It is often relieved by recumbency and flexion of the hip. A positive Tinel's sign (eliciting pain by tapping the skin medial to the ASIS) suggests a neuropathic cause for the pain, but it is difficult and sometimes impossible to pinpoint the nerve involved.[5]

Conservative treatment includes lifestyle modification, use of analgesics, and nerve blocks.[2] While some authors have recommended selective neurectomy based upon the outcomes of nerve blocks, these selective procedures are more likely to result in either failure of the procedure or subsequent relapse because of the high incidence of neural connections between the nerves.[6] Current consensus favours triple neurectomy.[7]

THE CASE

A 54-year-old woman was referred to our urogynaecology unit for evaluation of intractable pain in the left groin of seven to eight months' duration. The pain was felt on the left side of an old abdominal incision, and radiated inferiorly into her left labium majus, left thigh, and into the lumbar region of her left lower back. She described the pain as sharp with a burning quality. It was aggravated by moving from a supine to a sitting position. It also became severe when she strained at stool. The pain had gradually worsened since its onset. The patient had also recently noted episodic swelling in the left labium majus.

The pain was characterized by the patient as so extreme and unrelenting as to cause her to contemplate suicide. At the time of consultation, she was using multiple pain medications including a fentanyl patch, regular hydromorphone, and anxiolytics. These medications had not controlled the pain.

Her surgical history included multiple low transverse laparotomies for Caesarean section, abdominal hysterectomy, several ovarian cystectomies, and lysis of adhesions. She had complained of abdominal pain in the left lower quadrant near the incision line that did not respond to trigger point injections but did resolve for a number of months after "exploration of the incision" on that side. She also had a long-term history of vaginal pain with significant dyspareunia unresponsive to a local excision in the vagina.

She had been seen by a plastic surgeon who, with imaging guidance, performed nerve root blocks through a posterior paraspinal approach that caused temporary paralysis of her left leg.

Before the consultation, an MRI of the inguinal region had been performed to exclude a possible mass in this area and showed no evidence of a mass, hernia, or adenopathy.

Physical examination identified tenderness in the left lower quadrant around the transverse incision. The pelvic examination revealed no evidence of pelvic prolapse. There was a suspicion of a mass in the left labium majus in the area of the canal of Nuck. There was vaginal mucosal atrophy and slight tenderness on bimanual examination. A repeat MRI focusing on the labia did not identify a cyst or any other pathology. A repeat examination confirmed that the pain was localized to the left lower abdomen, left side of the vulva, and groin. The patient was informed that the pain was most likely neuropathic. She was offered the option of undergoing exploratory surgery to identify and resect the sensory nerves in this area. She understood that