

Pudendal neuralgia

Mansour Khalfallah (1), Roger Robert (2)

(1) Polyclinique Côte Basque 7, rue Léonce Goyetche, Saint-Jean de Luz, France

(2) Nantes, France

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PUDENDAL NEURALGIA

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INTRODUCTION

The last 20 years have seen important developments in the field of classification of chronic perineal pain. The neurological nature of certain types of pain and their localisation in the territory supplied by the pudendal nerve has led to the identification of different types of pudendal neuralgia, amongst other things.

ANATOMY

The nerve arises from the anterior surface of the sacrum at the S3 nerve root and S2/S4 anastomoses, and forms the terminal branch of the pudendal plexus. It leaves the endopelvic region by passing below the piriformis muscle. At this level it is contiguous with muscle and also other nerves, in particular the nerve to the obturator internus muscle and the inferior gluteal nerve, but also with the trunk of the sciatic nerve and the posterior cutaneous nerve of the thigh. The convergence of the different nerve elements at this level, the fine links with the muscular elements and a better knowledge of the different sensory and motor targets have led to a deeper understanding of the plethora of symptoms observed and the initial difficulties encountered in the search for a precise classification. Via its collateral branches, the pudendal nerve provides the motor supply to the external anal sphincter, levator ani in

part, the bulbospongiosus and ischiocavernosus muscles, the superficial transverse perineal muscle, the deep transverse perineal muscle, the external urethral sphincter, the bulb of the penis, and the corpus cavernosus of the penis or clitoris. Its sensory territory includes the skin of the anal region, the skin covering the perineal body, the scrotum, the urethral mucosa and the penis. In the female, it supplies the labia majora, the external urethral meatus, the vaginal vestibule, the clitoris, the perineal body and the anus. On a somatic level, it 'rules' the perineum. Its abundant sympathetic fibres, which make up one-third of its fibres, explain the association of vegetative phenomena and strictly perineal somatic pain.

AETIOPATHOGENESIS

A hypothesis for neurogenic pain of compressive origin has now been established. Four sites of potential conflict have been identified: in the canal below piriformis; at the level of the region between the sacrospinous ligament and sacrotuberous ligament; at the entrance of the canal at the falciform process, a continuation of the sacrotuberous ligament; and in Alcock's canal (pudendal canal) within the obturator internus fascia [Fig 1].

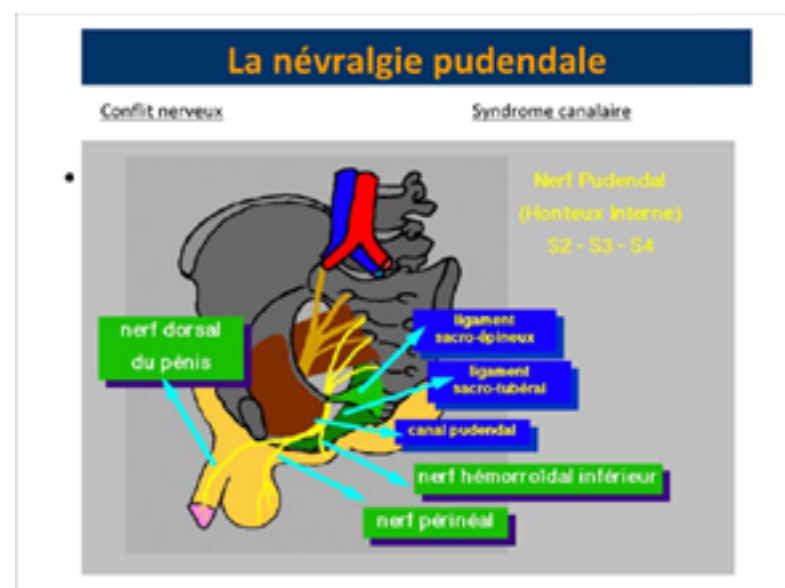


Figure 1. Sites of potential conflict: below piriformis, the region between the sacrospinous and sacrotuberous ligaments, Alcock's canal and falciform process.

CLINICAL PRESENTATION

Nowadays the syndrome is properly recognised and its clinical definition is continually being refined from observing classic forms that correspond to the major criteria (Nantes criteria), and some forms that are regarded as atypical when one of the major criteria is not fulfilled. In the classic form, diagnosis depends on the site of pain corresponding to all or part of the sensory zone supplied by the pudendal nerve [Fig 2], either unilaterally or bilaterally; the neuropathic nature of the pain, exacerbated or triggered by being in a seated position, and essentially a burning sensation; a normal clinical examination; and the non-inflammatory timetable followed by the pain. Lastly, a positive response to nerve blocks around the pudendal nerve confirms the diagnosis of pudendal neuralgia / entrapment neuropathy. The injections are essentially diagnostic; they must be carried out according to procedure (with monitoring by computed tomography), noting the pain before and after movement in the algogenic position. Systematic pelvic and lumbosacral imaging must be normal.

These elements are essential in order not to miss a case of pudendal neuralgia / entrapment

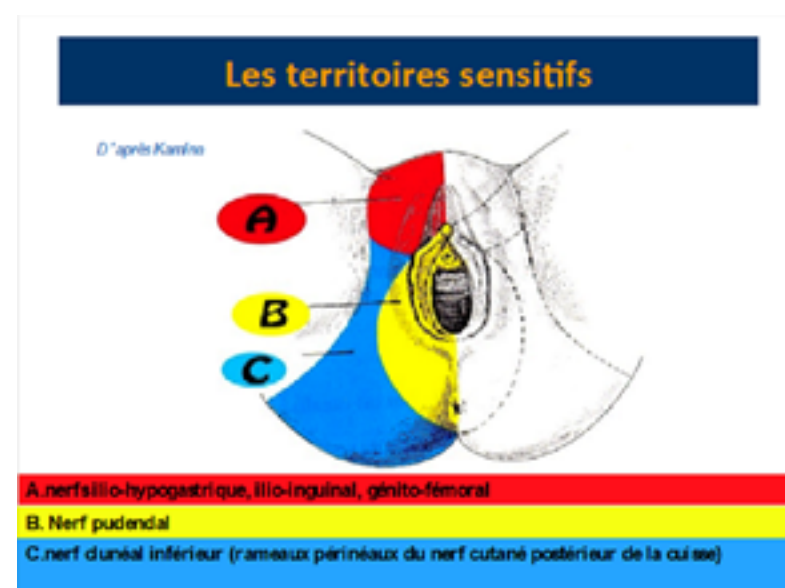


Figure 2. The three sensory zones of the perineum.

neuropathy. These conditions may be associated with the sensation of a foreign body in the rectum or vagina due to the vegetative component of the pudendal nerve, or hypertonia of the levator ani muscle that affects the orifices. Apart from these elements, which are the most frequently seen, the symptoms described by patients are extremely varied. They are due to the chronic nature of the pain and to regional hypersensitivity. This may be revealed by dysfunction of the neighbouring organs (bladder and rectum), or by a myofascial syndrome that may involve all of the muscles of the pelvis and perineum. A myofascial syndrome of the pelvitrochanteric muscles may accompany pudendal neuralgia and lead to a mistaken diagnosis due to discomfort relating to the nerve trunk caused by muscular cramps. This is also true for cases of truncated sciatica.

Electrophysiology, which is extremely painful for our patients, is no longer essential for the diagnosis of pudendal neuralgia. It is no longer offered systematically and its use is limited to complicated cases involving several pathologies.

TREATMENTS

Local injections (corticoids) have not proved to be of therapeutic value. Remember: injections are performed with a purely diagnostic aim.

First-line medical treatment involves drug therapy and tailored physiotherapy. Management must adopt a multidisciplinary approach and include the biopsychosocial components of chronic pain, which can evolve over the course of several years. Management can thus improve patients' lives considerably. In those who do not respond, surgery may be suggested to release the pudendal nerve.

Surgical management must also take place within a multidisciplinary framework. It is a last resort for patients. Improvement is usually protracted and takes place progressively over the course of a year. During this period medical supervision is essential. This supervision must be able to consolidate treatment and undertake new palliative approaches should surgical treatment fail (30% of cases).

Different surgical approaches have been described: transgluteal, transperineal and transvaginal. We have developed the transgluteal approach [Fig 3]. This is undoubtedly the sole approach to

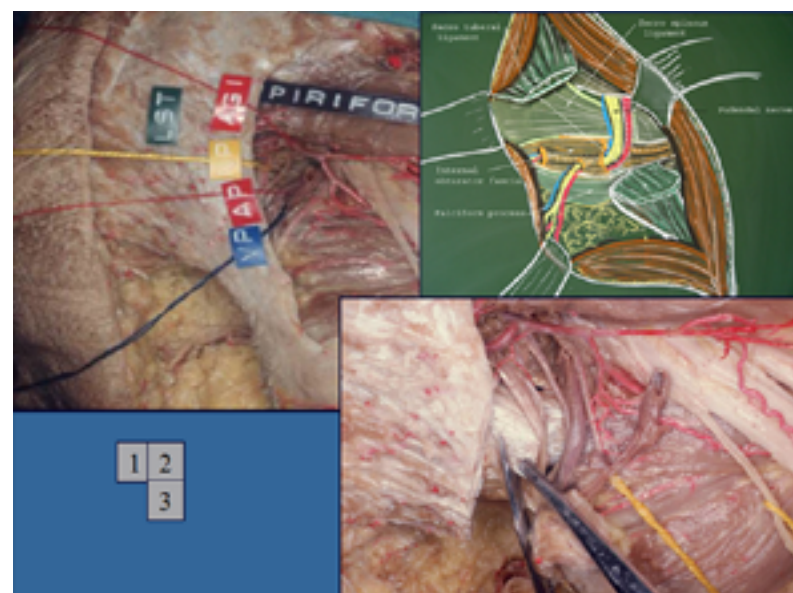


Figure 3. The transgluteal approach: 1: exposure of the sacrotuberous ligament. 2: after the sacrotuberous ligament is sectioned, the pudendal nerve may be visualised as it crosses back over the sacrospinous ligament. 3: sectioning of the sacrospinous ligament allows the pudendal nerve to be transposed within the ischial spine.

this type of pathology that seeks to characterise the “nerve conflict” by direct visualisation. It is this method alone that allows an appreciation of the conflicts and how to resolve them, without running the risk of a nerve lesion, while taking common anatomical variants into account. At present it is the only approach whose benefit has been demonstrated by a randomised prospective trial. It also constitutes the final diagnostic stage – no small thing, as it allows the conflicts to be visualised. This confirmation has a positive effect on patients, as their pain is now accounted for anatomically. Results published to date demonstrate an improvement (at least 3 points higher on the Visual Analogue Scale, VAS) in 2 out of 3 patients, of whom 44% are much better or cured.

Since then, our results have improved further. The transgluteal approach has been optimised (M.Khalfallah) by changing the patient's operative position. The move from a strict ventral decubitus position to a flexed-knee position allows a seating posture to be partially reproduced and reveals conflicts that have not been established up until then. It also modifies the surgeon's visual axis, permitting fuller and more controlled release of the nerve in Alcock's canal [Fig 4].

If we include better management of the muscular component and of the psychological effects of the chronic pain, we note an improvement in 76% of our patients.

The persistence of pain despite surgical decompression requires second-line management of this sequella: neuropathic pain whose cause has already been treated. In this case, we suggest stimulation at the level of the conus medullaris of the spinal cord. Early results are very encouraging.

In conclusion, pudendal neuralgia / entrapment neuropathy is now a nosological entity whose diagnosis rests particularly on the history and on diagnostic injections. Entrapment neuropathy as such may have misleading aspects that may be avoided with sound anatomical knowledge. Related forms of positional discomfort from nerve trunks exist: pain from the inferior clunial nerve is an example.

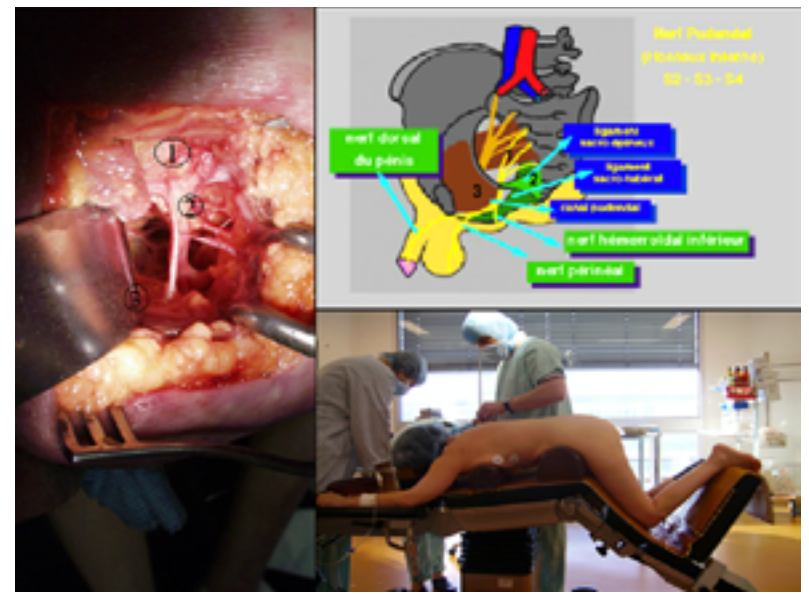


Figure 4. Flexed-knee position. The nerve is visualised as it emerges from below the piriformis muscle (1), opposite the sacrospinous ligament (2) and in Alcock's canal (3).

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