

Pudendal Neuralgia



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KEYWORDS

- Pudendal neuralgia • Pudendal nerve entrapment • Nantes criteria
- Pudendal nerve block

KEY POINTS

- Pain is most often unilateral and increases with sitting.
- Diagnosis is made clinically. Nantes criteria can be helpful in making the diagnosis.
- Treatment options include physical therapy, medications, pudendal nerve blocks, and surgical decompression.

SYMPTOMS OF PUDENDAL NEURALGIA

Pudendal neuralgia is a painful neuropathic condition, involving the dermatome of the pudendal nerve.¹ Amarenco and colleagues^{2,3} described pudendal neuralgia first in 1987. Patients with pudendal neuralgia usually present with burning pain in the distribution of the pudendal nerve. The pain is localized to the vulva, vagina, clitoris, perineum, and rectum in females and to the glans penis, scrotum, perineum, and rectum in males.¹ The pain can involve the entire area innervated by the pudendal nerve or affect a smaller region involving only a particular branch. In these cases, the pain is restricted to the terminal branches and may involve only the clitoris, the vulva/vaginal area alone, or the rectum alone.⁴ Patients with pudendal neuralgia may have associated symptoms such as urinary frequency and urgency, symptoms of painful bladder syndrome, and dyspareunia.^{5,6} The classic presentation of pudendal neuralgia is unilateral pain. However, bilateral pudendal neuralgia has been reported.⁷

Patients may have significant hyperalgesia (increased sensitivity and significant pain to mild painful stimulus), allodynia (pain in response to nonpainful stimulus), and paresthesias (sensation of tingling, pricking, or numbness).⁷ Typically, symptoms are

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present when patients are sitting down and are much less severe or even absent when they lying down or standing.⁴ Previous reports have shown that patients have significantly less pain when sitting on a toilet seat versus a chair. This phenomenon is believed to be associated with descent of the levator ani and less compression applied to the pudendal nerve. Patients usually awaken in the morning with minimal or no symptoms; however, the pain increases as the day progresses. Patients may report the sensation of having a foreign body in the vagina or feel as though they are sitting on an object. This pain may lead to some patients favoring a certain side while sitting, something that may be clinically observed by the clinician entering the examination room.⁸

ANATOMY

The pudendal nerve consists of sensory, motor, and autonomic nerve fibers. Sensory nerve cell bodies are located in the dorsal root ganglia of the sacrum, S2–S4. Anterior horn cells are located in the ventral horn of the sacral spinal cord (S2–S4) in a region called Onuf's (Onufrowicz) nucleus.⁹ The nerve forms in the sacral plexus and comes to lie medially and caudally in relation to the trunk of the sciatic nerve. Passing laterally, it enters the gluteal region in the infrapiriform canal and then traverses the greater sciatic foramen.¹ Accompanied by its artery, usually situated cranial to the nerve, it is also surrounded by veins.

The pudendal bundle passes around the termination of the sacrospinous ligament just before its attachment to the ischial spine. At this level, the pudendal nerve is situated between the sacrospinous ligament ventrally and the sacrotuberous ligament dorsally. In rare cases, the nerve may travel between split layers of the sacrotuberous ligament. The nerve then passes ventrally, medially, and caudally and enters the perineal region via the lesser sciatic foramen. It lies lateral to the plane of the levator ani muscle traveling within a duplication of fascia on the medial surface of the obturator internus muscle, which forms the Alcock canal (**Fig. 1**).¹⁰ The canal contains the pudendal nerve and vessels embedded in loose areolar tissue.¹¹ Most often, the 3 branches of the neurovascular bundle arise inside the canal: the inferior rectal nerve, the perineal nerve, and the dorsal nerve of the clitoris.¹²

The inferior rectal nerve supplies the integument around the anus and communicates with the perineal branch of the posterior femoral cutaneous nerve and its terminal branch, the labia majora nerve. The inferior rectal branch provides sensation to the distal aspect of the anal canal and to the perianal skin. This branch also provides motor innervation to the external anal sphincter.

The perineal nerve has a deep motor portion and 2 superficial sensory branches, the medial and lateral posterior labial nerves. This nerve provides sensation to the perineum and the ipsilateral labia majora. It also provides motor innervation to the transverse perinei muscle, the bulbospongiosus, the ischiocavernosus, and the sphincter urethrae and possibly contributes some branches to the levator ani muscles.¹³ This branch emerges at the posterior part of the Alcock canal.¹²

The dorsal nerve of the clitoris is the terminal and most superficial branch of the pudendal nerve, found at the level of the symphysis pubis. The nerve is an afferent nerve that carries sensory information from the clitoris. Emerging from the dorsal aspect of the erectile organs, it travels in the infrapubic region and enters the Alcock canal where it joins the nerve trunk.¹

Although the anatomy of the pudendal nerve is well outlined, great variation may exist, especially within the ischiorectal fossa, after its branches exit from Alcock

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