Pudendal neuralgia

Standing up to the problem

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The incidence of pudendal neuralgia appears to be increasing with the rise in desk jobs that cause women to sit for long periods of time. Physiotherapy and reducing time in the sitting position can help relieve the pain.

Pudendal neuralgia is defined as the perception of pain within the distribution of the pudendal nerve, which in practical terms is equivalent to the so-called 'saddle area'. Pudendal neuralgia is common, although population-based epidemiology studies are unfortunately lacking. The presence of an anatomical variant that predisposes people to pudendal nerve entrapment has been identified in three of 40 dissection specimens.[1] So, theoretically at least, pudendal neuralgia should be present in a large subset of the general population. Fortunately, not everyone with the anatomical condition will develop a clinically significant syndrome.

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Nevertheless, there are far more individuals with pudendal neuralgia than suspected and it is likely that modern lifestyle conditions, such as the increasing proportion of 'desk jobs', have contributed to the recent increase in clinical incidence. Although it will be difficult to prove, there is a clinical suspicion that an obstetric injury in a young woman may contribute to the occurrence of pudendal neuralgia in later life.[2]

Clinical presentation

Typical

The typical presentation of a patient with pudendal neuralgia is pain with sitting (Box 1). Classically, the patient is a woman working in a desk job, who reports that she experiences pain with sitting of increasing intensity as the day progresses. The pain is often not present during the weekend or while she is on leave from her job. Pain with sitting is linked to the sensory function of the perineum, one of the main roles of the pudendal nerve.

Atypical

The atypical symptoms of pudendal neuralgia are related to the other functions of the pudendal nerve, which are innervation of the anal and urethral mucosa as well as the lower one-third of the vagina, innervation of the anal and urethral sphincters, and innervation of the levator ani muscle. The atypical symptoms can be present in the absence of pain with sitting, but in general they coexist with the standard pain with sitting.

The most common of these atypical symptoms is dysuria or urinary urgency resulting from a hypersensitivity of the urethra. Patients may present to their GPs with symptoms of persistent urinary tract infection, but will have normal urinalysis. Most likely these patients also experience pain with sitting and are actually experiencing pudendal neuralgia.

Other atypical symptoms of pudendal neuralgia include nocturia, pain with sexual intercourse, faecal urgency, a sensation of the presence of a foreign object in the vagina or rectum and inappropriate sexual arousal (Box 2).

1. TYPICAL SYMPTOMS OF PUDENDAL NEURALGIA

- Pain in the 'saddle area' with sitting (or cycling)
- No pain during the night and when waking up
- Pain increasing with duration of sitting (or cycling)
- Pain relieved by standing or lying down

Coexistence with levator ani syndrome

Levator ani syndrome is the presence of involuntary overactivity of the puborectalis and pubococcygeus muscles and it can coexist with pudendal neuralgia. It is often unclear whether the neuralgia or the muscle overactivity is the dominant presentation. In women, overactivity of the levator muscle results in vaginismus, whereas in men the dominant presentation is obstructive defaecation. Both men and women will complain of voiding difficulties. One symptom that may be considered typical in patients with muscle overactivity is the sensation of a foreign object within the rectum or vagina.

Investigation

There is no specific investigation to diagnose pudendal neuralgia. The condition is identified as a result of history taking and physical examination. The only recommendation for routine testing, as for any pain condition, is to measure the levels of inflammatory markers (erythrocyte sedimentation rate and C-reactive protein) to exclude the presence of a major inflammatory condition.

An individual with severe symptomatology would eventually be referred to a pain specialist and undergo a pudendal nerve block. Nerve blocks have a primary function as a diagnostic test. Essentially, elimination of pain when a block is applied to a particular nerve is thought to indicate its involvement in the pain process (although this is still a controversial statement to some pain specialists). However, it does not automatically mean that the nerve in question is the culprit.

An MRI of the area, including the sacral spine and entire perineal region, is required in some cases to exclude more significant pathology, such as pudendal nerve entrapment at the level of the sacrospinous ligament or compression by extrinsic pathology of various origin (Figure). It is fair to say that the incidence of true organic pathology is low.

Pathophysiology

It is commonly accepted that pudendal neuralgia is the result of compression of the pudendal nerve, either through mechanical pressure while sitting on a chair or bicycle saddle or through pressure at the level of the ischial spine from increased muscle bulk or reduced pliability of the interligamentary tissue. An exception to this is pudendal neuralgia presenting after a vaginal delivery when the pudendal nerve is subject to significant elongation and results in true injury of individual nerve fibres. Pudendal pathology after a vaginal delivery often involves loss of function, such as numbness of the skin, and various forms of urinary and faecal dysfunction. In most cases, postpartum pudendal trauma resolves within six months post delivery. It is unknown if significant obstetric injury correlates with the development of pudendal nerve pain or dysfunction in later life.

2. ATYPICAL SYMPTOMS OF PUDENDAL NEURALGIA

- Urinary frequency and nocturia (more than three times a night)
- Persistent genital arousal
- Pain during and/or after intercourse
- Perception of foreign body in vagina or rectum
- Urinary or faecal urgency
- Pain in the 'saddle area' triggered by urination, defaecation or intercourse

Treatment

Having their pain recognised as a real issue often provides significant relief to many patients. There is little inflammation involved in the process of nerve compression, therefore over-the-counter NSAIDs are rarely effective. Neurotropic medications, such as amitriptyline and nortriptyline (both used off label) or in some cases gabapentin or pregabalin (indicated for the treatment of neuropathic pain), are the drugs of choice for patients with pudendal neuralgia. In most cases, low doses of these drugs are effective and if the symptomatology is linked to sitting at a desk, the patient may opt not to take any medication on the days with little or no desk time. Prescribing opioids should be avoided at all cost in view of the known deleterious effects of chronic opioid use such as dependence

Figure. Bilateral pudendal nerve block in a patient with unilateral pudendal nerve entrapment. The right pudendal nerve (on the left of the image) shows a normal course between the sacrospinous and sacrotuberous ligaments [1] and a normal extension toward the sacral roots [2], as well as filling of the Alcock canal [3]. The left pudendal nerve (on the right of the image) shows an obstructed course with normal interligamentary space [1] but narrow extension toward the sacral roots [2] and no fill of the Alcock canal [3].

and opioid-induced hyperalgesia. If there is a need for occasional management with pain medication, the drug of first choice is tramadol, preferably in combination with paracetamol.

First-line treatment involves changes in daily lifestyle, in particular avoiding sitting for prolonged periods of time. Sometimes modifying a desk to allow the patient to work in the standing position as well as the sitting position is all it takes to reduce symptomatology significantly. Some people may need to reorganise their physical exercise program. Physiotherapy and osteopathy are helpful in addressing muscle overactivity, either primary (as a contributing factor) or secondary (as a result of the pain), as well as deficiencies in posture.

Specialised physiotherapy is useful for the treatment of patients with overactive pelvic floor muscles. A subset of patients who are unresponsive to conservative management may benefit from infiltrations with botulinum toxin type A.[3]

If all of the above measures fail, more advanced treatment options include:

- pulsed radiofrequency either of the pudendal nerve itself or the sacral roots
- pudendal nerve-release surgery (in very select cases)
- neuromodulation of the sacral roots using implantable electrodes.

Less than 5% of patients with pudendal neuralgia will need an invasive approach for treatment.

Conclusion

Pudendal neuralgia, which means pain in the 'saddle area', is common. Most patients will respond well to conservative measures, such as limiting irritation of the pudendal nerve, in addition to physiotherapy or osteopathy to address secondary issues such as painful muscles or inappropriate posture. In a small proportion of patients, supplementary medical therapy is needed and in a few cases there might be the need for more invasive modalities such as pulsed radiofrequency, sacral neuromodulation or pudendal nerve-release surgery. MT

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