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Case Report Open Access

Pulsed Radiofrecuency on Terminal Branches of the Pudendal Nerve: Preliminary Results

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Case Report

Pudendal neuralgia is a frequent cause of chronic pelvic pain of not known origin. Patients normally present with perineal pain, usually unilateral in the area innervated by the pudendal nerve, especially in the region of its terminal branches: inferior rectal nerve, perineal nerve and dorsal nerve of the penis or clitoris. In women this includes the clitoris, mons pubis, vulva, lower 1/3 of the vagina, and labia. In men this includes the penis and scrotum [1].

Pudendal neuropathy can occur in men or women although about 2/3 of patients are women. The diagnosis is usually made based on the patient's symptoms, history, and exclusion of other illnesses such as infection or tumor. While no test is 100% accurate some of the more commonly used tests are the pudendal nerve motor latency test (PNMLT), electromyography (EMG), diagnostic nerve blocks, 3T magnetic resonance imaging (MRI) using special software and settings, and magnetic resonance neurography (MRN).

Management by pain clinics, includes the treatment of neuropathic pain (with gabapentin, pregabalin, duloxetine, amitriptyline), Pudendal nerve block under fluoroscopic guidance with, long-acting local anesthetics with steroid, pulsed radiofrecuency therapy (PRF), sacral stimulation and intrathecal infusion of drugs [2,3].

There are some cases resistant to the anesthetic block of the nerve block and PRF despite the right diagnosis. We present the case of two patient who had a short clinically improvement after RFP guided by fluoroscopy but had a very good clinical response with PRF of the terminal branches guided by MRI in supine and prone position.

Patient 1

A 52-year old woman with sharp, burning pain (8-point visual analog scale: VAS; neuropathic pain diagnostic questionnaire: DN4 8/10) for approximately 2 years of the left gluteal, vaginal and perianal regions. She had failed multianalgesic therapy with: 3600 mg gabapentin, 25 mg amitriptyline and 80 mg oxycodone.

The patient is placed in the prone position, and the gluteal region is prepared and draped. Then a C-arm fluoroscope is projected in the anterior-posterior position with the patient in the prone position (at the level of the two femoral heads) until the pelvic inlet is visualized. The falciform process (the ischial spine) is then highlighted by 5- to 15-degree ipsilateral oblique angulation of the fluoroscope. A 25-gauge 3.5 inch needle (Spinocan. B/Braun) is advanced to the tip of the ischial spine, where the pudendal nerve transiently leaves the pelvis. At this point 3 ml of 0.25% lebobupivacaine and 12mg bethamethasone acetate provides excellent pain relief lasted several hours. PRF of the right pudendal nerve was proposed in hopes of achieving a long duration and improved pain control. Whit the same technical approach, 22-gauge 4mm active tip RF (cannula CC 10422-P) was inserted. The impedance 250 ohms and 0.3 mV of sensory stimulation performed at 50 hZ produced paresthesias in the distribution of the right pudendal nerve. PRF lesioning of 2Hz with 20 milisecond pulses was performed at 42 degrees Celsius for 360 seconds4. PRF provides excellent pain relif short (4-point VAS), several days (15 days), despite continuing with the same treatment.

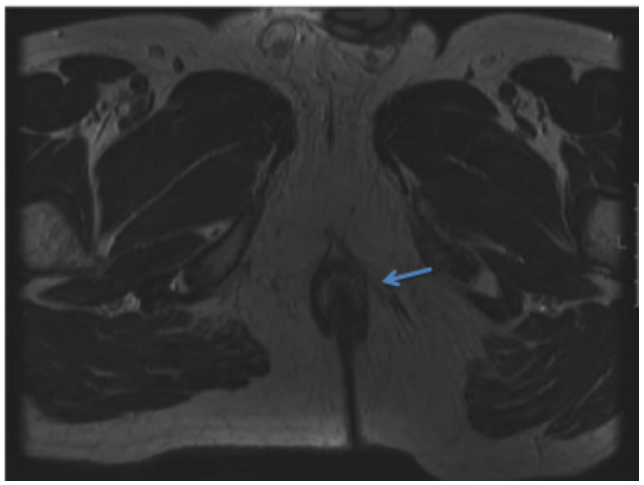

Figure 1: Diagnostic MRI (supine). Fiber tracts around the left pudendal terminal branches.

Two months after the technical, we performed an MRI of the pelvis floor (supine) to visualize the possibility entrapment or fibrosis (figure 1). We confirmed the place of the fibrosis by MRI (supine). Another MRI (prone), figure 2, was performed to marked in the skin the level fibrosis and we measured the distance between the skin and the fibrosis. Whit this marking, the patient is moved to the radiofrecuency room. We inserted the RF needle (cannula CC 10422-P) with sensory stimulation, we localized the target and we performed PRF with the parameters described. At 1 year post-procedure, patient reported significant improvement in her pain (3-point VAS) and she continued with 40 mg oxicodone and 900 mg gabapentin.

Patient 2

A 62-year old man with dull, burning and stabbing pain (9-point VAS ; DN4 9/10) for approximately 1 year of the left gluteal and perianal regions. He has very bad sitting tolerance, no tolerate sitting

over half an hour. Medication treatment with 600 mg pregabaline and 200 micrograms fentanyl transdermal (skin patch) provided only minor relief.

He had a positive response to diagnostic pudendal nerve block using the same protocol described in the patient 1. Pain relief of 60% was obtained for three days. We decided to perform a PRF with the same approach described in patient 1 [4]. PRF provides excellent pain relif for ten days.

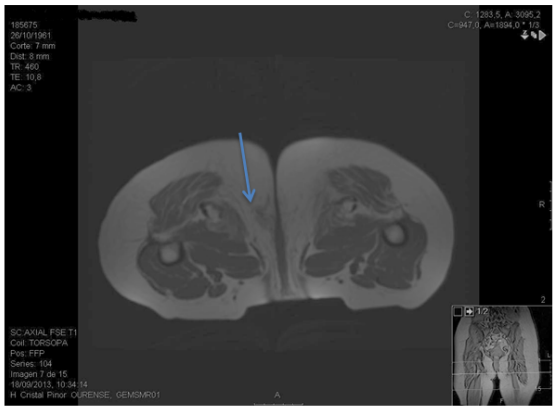

Figure 2: MRI Skin mark pre-radiofrecuency (prone).

We performed an MRI of the pelvic floor to diagnose the etiology of the pain finding fibrosed tracts around the terminal branches of the pudendal nerve (Figue 3). In a second MRI (prone), we did a skin mark pre-PRF (Figure 4) and we repeated the procedure.

After the procedure the patient reported tolerating sitting for 5-6 hours and pain relif 70%. After six month, he still has good sitting tolerance and pain relief maintained. His analgesic therapy was reduced successfully and he felt motivated to return to work.

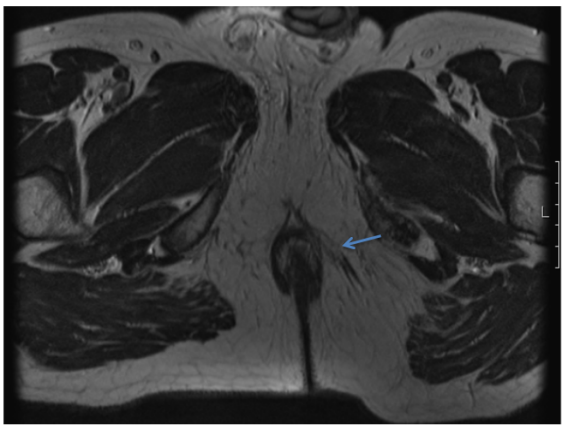

Figure 3: Diagnostic MRI (supine). Fiber tracts around the left pudendal terminal branches.

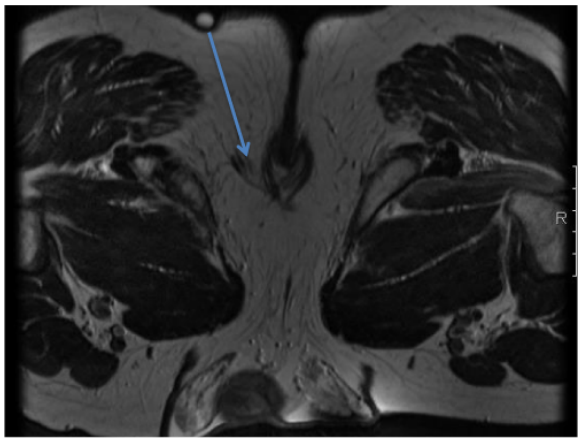

Figure 4: MRI Skin mark pre-radiofrecuency (prone). Marked in the skin the level fibrosis and we measured the distance between the skin and the fibrosis.

Discussion

MRI scan is the imaging of choice to rule out lumbar spine pathology and to look for specific pelvic pathology causing compression of the pudendal nerve. Visualization of pudundal nerve on MRI can be challenging, but with advances in MRI it may be possible to diagnose pudendal nerve entrapment and and treatment in certain situations.

Until recently, there were no specific radiological findings in patients with pudendal nerve entrapment 5 .Advances in MRI, allow for good visualization of the main trunk of the nerve and terminal branches. In our practice, this imaging modality can tremendously change the way we diagnose pudendal nerve entrapment. In some studies MRI findings have a good correlation with findings during transgluteal decompression surgery.

The MRI to detect better than any other imaging technique, focal abnormalities in the ischioanal, ischiorectal fat , that originated perineural fibrous tracts [6].

In these two patients the MRI allows diagnose fibrosis of the terminal branches, skin mark and measured skin- fibrosis distance, facilitating diagnosis and treatment.

Nevertheless, more research is necessary to determine its validity.

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