



PUDENDAL NEURALGIA: A CASE FOR CHIROPRACTIC INTERVENTION

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ABSTRACT

Objective: To describe the course of chiropractic management for an adult male experiencing chronic pelvic pain due to Pudendal Neuralgia.

Clinical Features: A 25-year-old male sought chiropractic care for a 10-year history of persistent pelvic pain following unsuccessful treatment that included physical therapy, avoidance of irritating activities, gabapentin medication, and various supplements including Vitamin B12 and alpha lipoic acid. The pain began as tingling, numbness, and a stabbing sensation in the left gluteal region and extended to his anus and left scrotum. He also reported experiencing constipation that appeared to coincide with an exacerbation of his symptoms. This condition initially worsened following repetitive activities associated with salsa dancing, which included lifting dance partners. Furthermore, ongoing aggravating factors included all core exercises, running, salsa dancing and playing soccer. Avoidance of irritating activities, short bouts of walking, and low intensity exercises offered limited and short-term relief.

Intervention and Outcome: Multimodal chiropractic care involved high-velocity low-amplitude lumbosacral spinal manipulation, multiple forms of manual therapy,

(e.g., instrument assisted soft tissue mobilization and neuromobilization), as well as rehabilitation exercises. Goals of treatment included symptom reduction and increased tolerance for daily exercise, in particular return to dance. The main focus of treatment was to perform manual therapy over the soft tissue structures of the perianal region, an area that the Pudendal Nerve travels through. The main structure that was treated was the obturator internus.

Conclusion: This case describes a course of chiropractic care for the management of an adult male with Pudendal Neuralgia. In this case, treatment involved a combination of soft-tissue treatments combined with lumbopelvic spinal manipulation, which was associated with resolution of the patient's Pudendal Neuralgia symptoms and a return to normal activities. (*J Contemporary Chiropr* 2023;6:79-83)

INTRODUCTION

Pudendal Neuralgia (PN) is an uncommon peripheral nerve entrapment (PNE) that occurs in about 1 in 100,000 people. (1) It is believed that this condition often goes unrecognized, misdiagnosed, or is inappropriately treated. (1,2) Patients with this condition commonly have been examined by practitioners from a variety of disciplines only to have treatments fail, leaving them with few options to effectively manage their condition. (3) A variety of treatment options address Pudendal Neuralgia (PN), including surgical decompression, nerve blocks, injections of a local anesthetic, pharmaceuticals, physical therapy, soft tissue treatments, or manipulative therapies. (3-5) More invasive treatments have failed to demonstrate benefit beyond the less invasive and are limited to providing

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short-term relief. (1,5) Other recent case studies are starting to shed light on the potential of conservative treatment options with regard to Pudendal Neuralgia. (5, 6)

PNE are areas along a nerve's anatomic pathway where internal or external forces cause compression or constraint of the nerve via adhesions. (7) PNE can be caused by overlying tissue and/or tissue that the nerve travels through. (7) Altered nerve function can occur in minutes under pressures as small as 20 mm Hg. (7)

Pudendal Neuralgia is most commonly caused by entrapment/compression at various sites along its short path. (1) For the Pudendal Nerve, these tissues specifically include beneath the piriformis, between the sacrospinous and sacrotuberous ligaments, and within Alcock's canal. These peripheral nerve entrapments can lead to chronic disabling neuropathic pain and altered sensation. (8)

There is little in the literature discussing multimodal chiropractic therapy for various nerve entrapment sites affecting the Pudendal Nerve, causing Neuralgia-like symptoms. The purpose of this report is to describe a case of an adult male with symptoms associated with chronic Pudendal Neuralgia who was treated with a combination of lumbosacral spinal manipulation, various soft tissue treatments, and rehabilitation exercise.

CASE REPORT

A 25-year-old male had a 10-year history of ongoing Pudendal Neuralgia. The initial injury began while he was working as a salsa dance instructor while also working out regularly. The symptoms began as left-sided tingling and stabbing pain that were initially located in his left lateral gluteus muscles and extended medially and inferiorly to the anus, into the left side of the scrotum and into the left groin. He also reported chronic constipation and abnormal sexual function that coincided with his pain. He chose not to disclose further details beyond "It's not quite right when its flared up." The patient would experience an exacerbation of his symptoms with any physical activity beyond walking and noticed significant exacerbations with any lunging or core work-outs. These presenting symptoms are often associated with a cauda equina syndrome (CES.) CES is a medical emergency. During the initial onset of his symptoms 10 years ago, the patient visited a local hospital for an evaluation. He saw multiple doctors and an MRI was performed that ruled out CES. The hospital then referred the patient to a neurologist, who

performed a full exam and eventually a Pudendal Nerve conduction-velocity test. This supported the idea that the patient was experiencing Pudendal Nerve irritation. Once the diagnosis of Pudendal Neuralgia was made, the patient tried different treatments over the last 10 years with varying degrees of success.

Treatment consisted of various medications such as gabapentin, steroid prescriptions, and over-the-counter medications such as acetaminophen, naproxen, and ibuprofen. None of the medications offered any symptom relief. One year prior to seeking chiropractic care, he began taking the the supplements alpha-lipoic acid, and B12, which he reported providing short-term relief during symptom flares, but these supplements were unable to completely resolved his symptoms. He also went through a 4-month trial of physical therapy targeting the piriformis, adductors, and hamstrings that did not resolve symptoms. Upon his visit for chiropractic evaluation, aggravating factors continue to include any physical activity, sports, core exercise, and heavy lifting. The patient discontinued dancing because of the aggravation of symptoms that would occur. With all previous treatments, he was able to manage pain as long as he limited his exercise and activity levels.

During the initial chiropractic visit, the patient had little pain or tingling symptoms, since he had been avoiding any provocative activity for several months. He reported that he was living a sedentary lifestyle, aside from work, as it was the only way he was able to avoid aggravating his symptoms. Even with his sedentary lifestyle, he would continue to have what he reported to be "mild" flare-ups on a weekly basis. These would consist of chronic constipation, intermittent numbness on the left side of the scrotum, and left lateral hip pain. He outlined his goals of treatment. He wanted to decrease the pain intensity, decrease his symptom frequency, and to return to dancing and working out without limitations.

We were able to reproduce symptoms in our office with deep palpation of the left obturator internus. He exhibited palpable hypertonicity and active trigger points in the left obturator internus, left piriformis, left gluteus medius, and left superior gemellus. A sensory examination over the L1-S1 dermatomes was performed with the patient in a supine position. The sensory exam was performed bilaterally and determined to be within normal limits. The patient reported left-sided scrotal paresthesia; however, he requested no sensory evaluation be done due the sensitivity of the area. When

palpating for joint restriction there was bilateral fluid

motion restriction of the sacrum.

Treatment included multimodal chiropractic care consisting of spinal manipulation of the lumbosacral region, soft tissue manipulation, neuromobilization, and corrective exercises. Care was focused on the perineum and deep external rotator muscles of the hip. Including the obturator internus and piriformis. A treatment plan of 8 visits over the next 4 weeks was initiated. The aim of specific care modalities included soft tissue treatment focused toward muscular hypertonicity of the external rotators of the hip and adductors. Corrective exercises were prescribed to build strength in the chronically taut and tender hip musculature. Hip strengthening was focused on single leg stance position working on hip stability and balance.

Following the first treatment, the patient reported having a significant flare up of his symptoms. The patient compared his symptoms to a severe flare up that he would experience any time that he tried to reintroduce activity. Typically, without intervention these flares up would take anywhere from 2-4 months of a sedentary lifestyle to fully resolve with constant symptoms of varying intensities present over that period of time. With each subsequent appointment he began to experience gradual improvement.

In an effort to mobilize the Pudendal Nerve, the patient was placed in a side-lying position with his right side down. He was instructed to bring his left hip into flexion and then into external rotation with his ankle falling off the table. When performed for 10-30 reps the patient reported symptom improvement. This exercise was used to self-manage his symptoms at home. One notable improvement that correlated with this neuromobilization exercise was an improvement in his constipation. He struggled with constipation and was having bowel movements every 3 days. When constipated, he reported that performing this exercise would elicit a bowel movement within 1-2 hours. Initially the first set of 10 nerve glides would increase his symptoms but as he continued to perform more sets the symptoms would improve. This helped to abolish the sharp and stabbing pain he was experiencing and reduce it to a diffuse dull pain.

By the fourth visit, he reported improvement and noted that this was the first time he had been pain free in the gluteal and genital region since the treatment began. He continued to experience paresthesia in those regions. One of the main symptom provocations included any core activation exercises. The patient would often

experience an exacerbation of his pain after attempting to "brace his core." We discussed how one way to brace the core effectively was to create intrabdominal pressure using diaphragmatic breathing. We assessed his breathing patterns. This revealed that he primarily used his accessory breathing muscles and elevation of his chest to take a deep inhale. He was taught to breathe using a diaphragmatic breathing technique and he was shown how to create intrabdominal pressure to activate his core and pelvic floor. Using the intrabdominal pressure and a proper core stabilizing technique, the patient was able to increase the corrective exercise component of his treatment plan without exacerbation of his painful symptoms. His core stabilization corrective exercises included diaphragmatic breathing, "dead bug," and a side plank.

With continued regular manual therapy over the perineum and a gradual progression of his corrective exercises, he experienced an improvement in his scrotal and groin paresthesia symptoms to a point where they were only present 20% of his waking hours.

After re-evaluation, his initial care plan was extended due to continued symptom improvement of the frequency of his symptoms. At the re-evaluation, he reported that he was experiencing symptoms of his waking hours. His home exercises no longer provoked symptoms. He then progressed to playing soccer and performing at home work-outs with a very mild onset of symptoms.

He then made the decision to try and rid himself of his remaining symptoms by taking a B12 supplement. He supplemented an unknown dose of B12 daily for a week and experienced complete symptom resolution. Prior to chiropractic intervention, the B12 supplement only worked when taken in conjunction with Alpha-Lipoic Acid and he still could not tolerate exercise. This was the first time he had been completely symptom free without completely eliminating activity. He tried discontinuing his B12 supplementation but found that the paresthesia of the left scrotum and groin returned roughly 10% of the day. He was seen a total of 14 times over the duration of 56 days to full resolution of symptoms; however, he continues ongoing supplementation of B12.

We followed up with the patient approximately 1 month after his final treatment and he reported that he had minimal symptoms. He has been gradually increasing his physical activity without any significant exacerbation and was no longer taking any B12 supplements. He continues to use his rehabilitation exercises and

adductor stretches if he feels any mild symptoms returning and they prevent any exacerbation of his symptoms.

DISCUSSION

Multimodal chiropractic treatment methods for nerve entrapment are not commonly reported in the literature. Multimodal chiropractic intervention seems to show promise in for treatment of Pudendal Neuralgia.⁽⁵⁾ It is important to look into the anatomy of these entrapments to open understand why multimodal chiropractic care, including HVLA lumbosacral adjusting, IASTM, manual therapy, neuromobilization, and corrective exercise paired together, could show positive outcomes for those with Pudendal Neuralgias.

In order to understand how the nerve can become entrapped, it is important to understand the path of the nerve. The Pudendal Nerve is a paired nerve, which means it arises bilaterally from the sacral ventral rami of S2-S4. (1,8,9) The nerve forms at the front of the sacrum and travels laterally through the greater sciatic foramen just below the piriformis muscle. (1,8,9) When the piriformis muscle becomes hypertonic or is in spasm it entraps the Pudendal Nerve beneath it. (8) The nerve then travels around the posterior aspect of the sacrospinous ligament, where it can become entrapped between the sacrospinous ligament and the sacrotuberous ligament, and then back into the lesser sciatic foramen. (1,8,9) This has been found to be the most common place the nerve becomes entrapped. (8) After entering the lesser sciatic foramen, the nerve then travels inferior just medial to the ischial spine where it enters into a connective tissue sheath called Alcock's canal. (1,8,9) Alcock's canal is another location where the nerve can become entrapped as it travels down the connective tissue sheath. When traveling down the Alcock's canal, the nerve dives into the perineum, where it begins to give off its terminal branches. As the nerve moves towards the pubic symphysis it terminates in the ischioanal fossa. (8,9) These terminal branches separate from the Pudendal Nerve in this order: 1) inferior rectal nerve, 2) perineal nerve, 3) dorsal nerve or the penis/clitoris (1,8,9)

The Pudendal Nerve has both motor and sensory innervation. (8) However, it tends to cause more sensory symptoms than motor. (8) The nerve has motor control over somatic muscles that control penile/clitoral erection, the external anal sphincter, and the external urethral sphincters. (9) This also includes the ejaculation muscles in men. The nerve controls sensation received

from the penis/clitoris, labia minora, posterior aspect of the labia majora, posterior aspect of the scrotum and the lower 1/5 of the vaginal canal. (9) Symptoms of entrapment of the Pudendal Nerve include unilateral or bilateral pain and dysfunction in the pelvic floor and sex organs. (9) Other symptoms include paresthesia (burning, tingling, numbness) in the area the Pudendal Nerve innervates, including the perineum and sex organs. (1). It can also cause loss of bowel and bladder function. (1)

There are 5 criteria that must be present in order to diagnose Pudendal entrapment. (2) These include:

- Pain in the region of the Pudendal Nerves innervation
- Pain predominately present while sitting due to increased compression of the nerves
- No increase in pain at night
- No objective sensory impairments
- Pudendal Nerve block provides relief.

Other criteria include burning, shooting, stabbing pain and numbness. Worsening of pain during the day is characteristic of Pudendal Neuralgia caused by entrapment, as is Pain triggered with defecation and tenderness to palpation in the perineum. (2) Exclusion criteria for Pudendal entrapment include imaging abnormalities, exclusively paroxysmal pain, pain that does not correspond to the Pudendal Nerve innervations, and pruritus. (2)

Limitations

This case report describes the treatment of a single patient and, therefore, is not generalizable to other patients.

CONCLUSION

Future research, including additional case reports and more rigorous randomized controlled clinical trials, should consider the use of multimodal chiropractic intervention in the treatment of peripheral nerve entrapments as a whole, but specifically PN.

This study presented a case of Pudendal Neuralgia in which the obturator internus was thought to be the dysfunctional tissue leading to the entrapment. The patient responded favorably to the described course of chiropractic care. This further adds to previous

reports by Olson *et al* that demonstrate the resolution of PN using conservative chiropractic intervention. Of significance to these case studies it is demonstrated that patients may be able to avoid more invasive treatment options for PN, such as nerve blocks or surgical intervention. The results suggest that the treatment described in this case report could potentially aid in the recovery of PN and warrants further study.

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