

# Chiropractic Management of a Patient With Perineal Numbness After Arthroscopic Hip Surgery: A Case Report

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## ABSTRACT

**Objective:** The purpose of this case report is to describe the chiropractic management of a patient with postoperative perineal numbness as a result of hip arthroscopy.

**Clinical Features:** A female patient presented to a chiropractic clinic with 7 weeks of ongoing perineal numbness after right hip arthroscopic surgery with labral repair. The patient reported lack of sensation during urination, sexual intercourse, and the insertion and removal of female hygienic products into the vagina.

**Intervention and Outcome:** Conservative care included myofascial therapy to the psoas and obturator internus muscles and instrument-assisted soft tissue mobilization over the obturator internus. Manual manipulation to the pelvis was also performed. The patient reported complete resolution of perineal numbness after 3 chiropractic treatments.

**Conclusion:** With conservative chiropractic management, full resolution of sensation for this patient was achieved. (J Chiropr Med 2016;xx:1-4)

**Key Indexing Terms:** *Chiropractic; Arthroscopic; Mobilization; Perineal*

## INTRODUCTION

Safety of surgical procedures has improved greatly in recent years with an ever-growing body of research, newer surgical techniques, and other medical advancements.<sup>1,2</sup> Accordingly, the risk of complications during and after surgical interventions has also dropped drastically.<sup>1,2</sup> Inevitably, though, all medical procedures carry some inherent risk of side effects. Reported complication rates after arthroscopic hip surgery are as high as 27%, with that percentage decreasing to 2% to 10% specifically for cases related to neural injury.<sup>1,2</sup> There are 4 primary reasons for complication of hip arthroscopic surgical procedures. These complications include (a) deep and dense structures that surround the hip joint; (b) the small joint space, which limits the ability to move the instruments around inside the joint space; and (c) the process of distracting the capsule for the surgeon to introduce the instruments into the joint space; also, (d) there are special required materials and tools needed for distracting a hip joint.<sup>3</sup> Nerve damage,

specifically of the pudendal nerve, has been a reported side effect stemming from the tractioning process.<sup>2,3</sup> Furthermore, treatment for pudendal neuralgia has been abstract and rather mysterious. The largest series of 170 patients with pudendal neuralgia reported cure in 45% and improvement in 22% with surgical neurolysis. In the same study, imaging-guided pudendal nerve blocks offered short-term improvement in 65% of the patients.<sup>4</sup>

The purpose of this study is to demonstrate a treatment approach in which soft tissue mobilization and joint manipulation was used with a patient who had perineal numbness after surgical intervention involving a labral repair. There is little evidence in the literature discussing manual therapy to various nerve entrapment sites that may affect the pudendal nerve, causing neuralgia-like symptoms.

## CASE REPORT

A 31-year-old female patient had arthroscopic hip surgery to repair a torn labrum. After surgical intervention, the patient was referred to physical therapy for proper postoperative rehabilitation. The therapy was scheduled for 8 to 12 weeks of follow-up care with a doctor of physical therapy (DPT). On the initial visit with the therapist, the patient expressed concern regarding numbness in the perineal area that was local and not extending to the lateral thigh. The original differential diagnosis was a possible nerve compression or entrapment. On the third therapy session, exactly 3 weeks and 6 days postoperative, the DPT

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contacted the doctor of chiropractic (DC) working in the same facility and consulted on the soft tissue findings around the genitofemoral and pudendal nerves. Moderate to severe spasms were located in the right psoas, obturator internus, gemellus, and piriformis. These were addressed by the DPT at that time through soft tissue mobilization. Two days later, the patient noticed a possible change. The patient was cleared by the surgeon to see the DC for the soft tissue dysfunction associated with the neuropathic symptoms.

During the initial visit with the DC, the patient presented with a chief complaint of complete perineal numbness after right arthroscopic hip surgery with labral repair. She was exactly 7 weeks postoperative after right hip arthroscopy with labral repair at the time of presentation. She described total perineal numbness in the vaginal and rectal region that had started immediately after the surgery and had not improved. She indicated that sensation was absent during sexual intercourse, urination, and when inserting or removing tampons. She denied any pain in the genital region. Her surgeon informed her that this complication could have been caused by the position the patient was in during surgery, resulting in nerve compression. The patient was undergoing her proper postoperative rehabilitation per the recommended protocols given by the surgeon. The patient thought her hip strength and range of motion were improving as they should; however, it was not helping the perineal numbness. She also denied numbness in the lumbar spine and lateral or medial thigh.

On examination and health history, it was noted that the patient's body mass index was 25.4. She had conceived 4 children, 3 of them being caesarian births. The patient denied any personal health history or family history related to hip joint pathologic conditions. Objective findings at the time of presentation included soft tissue pathologic condition located in the right psoas, piriformis, gemellus, and obturator internus. The obturator internus, gemellus, and piriformis were more edematous in nature, and there was severe spasming noted throughout the right psoas. Strength testing at the L4, L5, and S1 regions was 5/5 bilaterally. It is important to note that the DC did not perform strength testing of hip flexion, extension, abduction, and adduction per the request by the DPT and the postoperative rehabilitation protocol in place. Sensory testing in the perineal region also was not performed. At the time of the initial presentation, the DC diagnosed the patient with a peripheral nerve compression and/or entrapment to include the pudendal nerve at the obturator internus or an entrapment of the genitofemoral nerve at the psoas muscle. Treatment options were discussed with the patient, regarding whether to treat one of the entrapment sites to help find an exact diagnosis or to treat both areas with the goal of eliminating the perineal numbness as quickly as possible. The patient indicated that she was less concerned about which nerve may be entrapped and wanted complete resolution of her symptoms as quickly as possible.

Initial treatment consisted of a myofascial therapy to both the right psoas and right obturator internus muscles. To perform myofascial therapy to the right psoas, the patient was positioned in supine with her hip flexed to 90°. The doctor's contact was placed on the psoas muscle while the patient actively brought the hip into 5° of extension and contact was held on the psoas. To perform myofascial therapy to the obturator internus, the patient was positioned lying on her left side. The hip was placed into 5° of extension. The doctor's contact was placed on the obturator internus while the patient actively brought the right hip into flexion. The patient's hip was then brought into 25° of external rotation after the patient had reached end range of hip flexion. Graston technique, a form of instrument-assisted soft tissue mobilization developed by David Graston, was then performed over the obturator internus. Chiropractic manipulation was provided in the pelvic region as well.

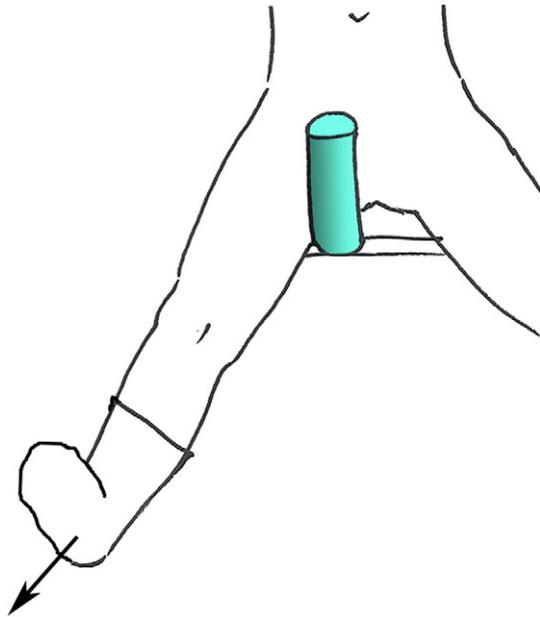
On the second day of treatment by the DC, 5 days after the initial appointment, the patient noted that the anterior portion of her perineal region did not feel as numb. She indicated that only a very small portion of her inner region was still slightly numb. She could now feel when she was urinating but still could not feel anything during intercourse. On examination at the second treatment, it was noted that there was improvement of the obturator and psoas musculature pathologic conditions. The muscles were not as taut and tender, there was less edema, and the myospasm in the right psoas had decreased. Again, the patient was brought through the same treatment as initially provided.

Eight days later, the patient presented into the chiropractic office for her third treatment. She indicated that the numbness had completely resolved. She reported no pain in her genital region and also stated that her hip had been feeling great. Objectively, the patient still had mild tension and tenderness to palpation in the psoas and obturator internus. Treatment was again provided, consistent with the previous 2 visits. The patient was discharged after that treatment. The patient gave consent for the publication of this case report.

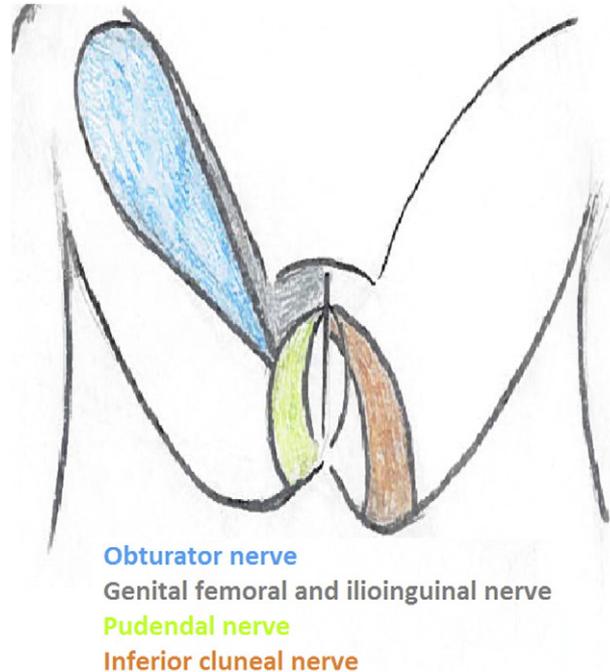
## DISCUSSION

To our knowledge, this is the first case report demonstrating the effectiveness of chiropractic intervention combined with manual therapy to treat perineal numbness after hip surgery.

In the process of performing hip arthroscopic surgery, traction is used to open up the hip joint, allowing the central compartment to be accessed by the treating surgeon. The process and positioning techniques used to traction the hip joint can result in nerve damage secondary to traction injury or injury caused by nerve compression (Fig 1). Current



**Fig 1.** Perineal post and patient placement for a hip surgery.<sup>2</sup>



**Fig 2.** Sensory distribution of the perineal region.<sup>8</sup>

published reports have indicated a positive correlation between increasing length of traction time and increasing traction force, both resulting in greater risk of nerve injury.<sup>2,3</sup> The larger risk comes from increasing the traction weight used. Studies have reported that an increase in 0.45 kg (roughly 1 pound) will increase the risk of a nerve injury by 4%.<sup>1-3,5</sup>

In diagnosing pudendal neuralgia, the essential criteria includes pain in the sensory innervation of the pudendal nerve, pain worse with sitting, the patient is not disturbed at night by the pain, there is no objective sensory loss on clinical examination, and there is a positive response to an anesthetic pudendal nerve block.<sup>6,7</sup> Complementary diagnostic criteria include numbness in the sensory innervation. Exclusion criteria include exclusively coccygeal, gluteal, pubic, or hypogastric pain; pruritus; and exclusively paroxysmal pain.<sup>6,7</sup>

Sensory innervation of the pelvic floor is shown in Figure 2 and includes the area between the anus and penis or clitoris.<sup>7</sup> Symptoms from pudendal nerve injury or entrapment can be purely sensory, purely motor, or a mixture of the 2. Although most neuralgias resolve fairly quickly, those that are longer lasting can be very traumatic for the individual involved. The most common finding of dysfunction is bilateral decreased sensation to the perineum and labia in women and perineum and scrotum in men. Symptoms of pain usually resolve quickly, whereas those that are sensory in nature tend to last longer and can accompany sexual disorders as well. Anatomically, the obturator internus is a common entrapment site of the pudendal nerve caused by muscular spasms.<sup>8,9</sup>

The prevalence of neuropraxic injuries after surgical hip procedures is relatively low, but the impact on patients' quality of life as a result of neurologic symptoms can be devastating. The surgical community is already taking steps to minimize these injuries by reducing the time and tension used during the procedures and also increasing the size of the perineal post.<sup>3,10</sup> According to the study conducted by Weber et al, femoroacetabular impingement and labral pathologic conditions are the 2 most common indications for hip surgery. An osteochondroplasty for femoroacetabular impingement and labral treatment were the 2 most common surgical procedures performed.<sup>11</sup> Major complication rates were 7.9% and the minor complication rates were 0.45%.<sup>11</sup> The 2 most common minor complications were iatrogenic chondrolabral damage and nerve injury.<sup>11</sup> Extra-articular fluid extravasation was the most common major complication.<sup>11,12</sup> It was also noted that minor complications associated with hip arthroscopy are generally technical and likely related to the learning curve associated with the surgical intervention.<sup>11</sup> It was suggested by Weber et al that the occurrence of minor complications would likely be reduced as surgeon experience increases and patient selection improves.<sup>11</sup>

It is important to note that there are several other causes of pudendal neuralgia and numbness in the perineal region. The pudendal nerve is a mixed nerve, containing both sensory and motor components. It arises from the S2-S4 nerve roots. The pudendal nerve emerges from the pelvis inferiorly and travels around the ischial spine, traversing

through the sacrospinous and sacrotuberous ligaments. It enters the perineum through the lesser sciatic foramen and then courses through ischioanal fossa and then through the pudendal (Alcock) canal that is formed by the duplication of the obturator fossa.<sup>13,14</sup> The pudendal nerve is predisposed to entrapment at 2 sites<sup>1</sup>: the ischial spine by compression of the sacrospinous and sacrotuberous ligaments and<sup>2</sup> the pudendal canal by compression of the falciform process of the sacrotuberous ligament or thickening of the obturator fascia.<sup>15</sup> Published reports suggest that pudendal neuralgia is more common in women than men. Cyclists are a common population affected by pudendal neuralgia, but it is not known why it afflicts some cyclists and not others.

Although in most cases neurologic injuries are transient and resolve within a few days to weeks, this case study illustrates the importance of timely interdisciplinary care to address symptoms that may be longer lasting. Improving interdisciplinary communication to achieve better patient outcomes is a goal to which every health care professional should strive. In our case study, the referring DPT found an impairment that needed to be addressed but was outside the therapist's personal skill set to treat. Because of prior interdisciplinary collaboration and education, the DPT was aware that the DC offered treatment for peripheral entrapments that would address the neuromuscular impairments. After clearance from the surgeon, the DC was able to successfully treat the restrictions with full resolution of symptoms. Open lines of interdisciplinary communication were vital to the achievement of our patient's outcomes.

### Limitations

The patient did have abnormal tissue findings in both the obturator internus and psoas musculature, both of which were treated. Because of this fact, the authors cannot completely exclude a peripheral entrapment of the genitofemoral nerve at the psoas. Subjectively, the patient did describe sensory deficits in the pudendal nerve sensory distribution, but a true sensory examination in the perineal region was not performed. Additionally, when evaluating the current research, it becomes evident that the obturator internus is a common site of pudendal nerve entrapment after arthroscopic surgical intervention for hip pathologic conditions.<sup>8</sup> Furthermore, when looking at Nante's criteria for pudendal neuralgia, the essential criteria does include pain in the sensory innervation, which is worse with sitting. It is important to note that in this case, the patient did not describe pain in the perineal region; rather, she just described numbness. The results of this case report may not necessarily be applicable to other patients with similar presentations.

### CONCLUSIONS

This patient responded favorably and quickly to myofascial therapy of the obturator internus and psoas muscles, resulting

in full sensory recovery. To the authors' knowledge, this is the first case report demonstrating manual therapy used to resolve perineal numbness that occurred after an arthroscopic hip surgery for a labral repair. The results suggest that manual muscle therapy to the area of neural entrapment may possibly aid in the recovery of perineal pain and pudendal neuralgia.

### FUNDING SOURCES AND CONFLICTS OF INTEREST

No funding sources or conflicts of interest were reported for this study.

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