

Concomitant Ultrasound-Guided Pudendal Nerve and Fluoroscopic-Guided Perineal Nerve Cryoneurolysis to Treat Pudendal Neuralgia

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Introduction

- Pudendal neuralgia can present as a debilitating and difficult-to-treat etiology of chronic pelvic pain
- Involves glans, penis, and scrotum (males), vagina and clitoris (females) and rectum and perineum
- Etiology: entrapment of the pudendal nerve between its origin at the S2-S4 ventral rami and its terminal branches (inferior rectal nerve, perineal nerves, and dorsal nerve of the penis/clitoris)
 - Repetitive use of pelvic floor muscles → bony remodeling of the pelvis/pelvic muscle dysfunction
 - Also due to cumulative microtrauma to the pudendal nerve or its terminal branches
- Patients with chronic SCI have been shown to have higher rates of pudendal nerve dysfunction
- Tx: conservative management such as seating pads to optimize sitting position and pelvic floor PT
 - If not improving, medications and interventional options may be considered
- Pudendal nerve blocks offer diagnostic and transient therapeutic benefit
- Cryoneurolysis has been shown to provide longer-lasting relief, while avoiding some of the risks associated with more invasive options such as surgical decompression
- Perirectal approach to target the pudendal nerve may be preferred due to vascular considerations
 - In this approach, the pudendal nerve is stimulated as it courses along the ischial spine, with maximal contraction of the external anal sphincter indicating proper placement
 - Following SCI, the anorectal motor twitch may not be elicited → targeting the terminal branches may be appropriate

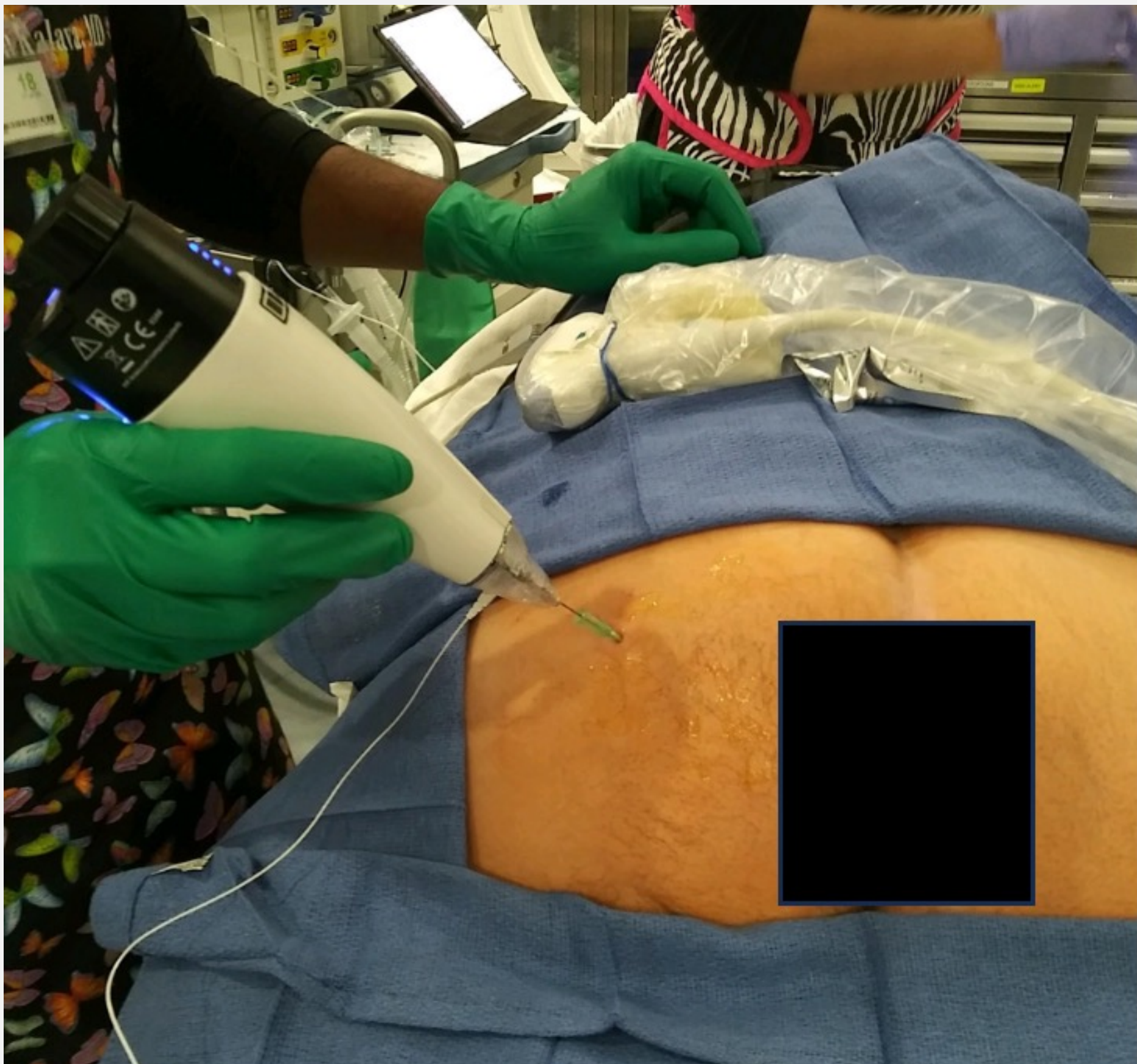


Image 1. Cryoneurolysis of the left pudendal nerve in area of ischial spine is performed after using ultrasound guidance

Case Description

- 54 y/o M with a PMH of T11 paraplegia following a MVA presented with intractable penile and left scrotal pain
- Endorsed 10/10 shooting pain that he located to the penis and left scrotum with radiation down his left lower extremity
- Had previously seen multiple pain providers for this pain with multiple interventions, including:
 - Pelvic floor PT, multiple nerve blocks (although never a pudendal nerve block), SCS, and DRG stimulator without benefit
- Upon presentation, he was taking buprenorphine buccal film 450 µg BID, as well as max dose gabapentin (1200 mg TID) without significant pain relief
- After evaluation at clinic, the patient underwent bilateral USG pudendal nerve blocks x2 with successful, but short-lasting pain relief
- Underwent bilateral USG cryoneurolysis of the pudendal nerve and bilateral fluoroscopic-guided cryoneurolysis of the perineal nerve (Images 1 and 2)
- At 1 month follow-up, the patient endorsed nearly complete relief of his prior pain without any known complications

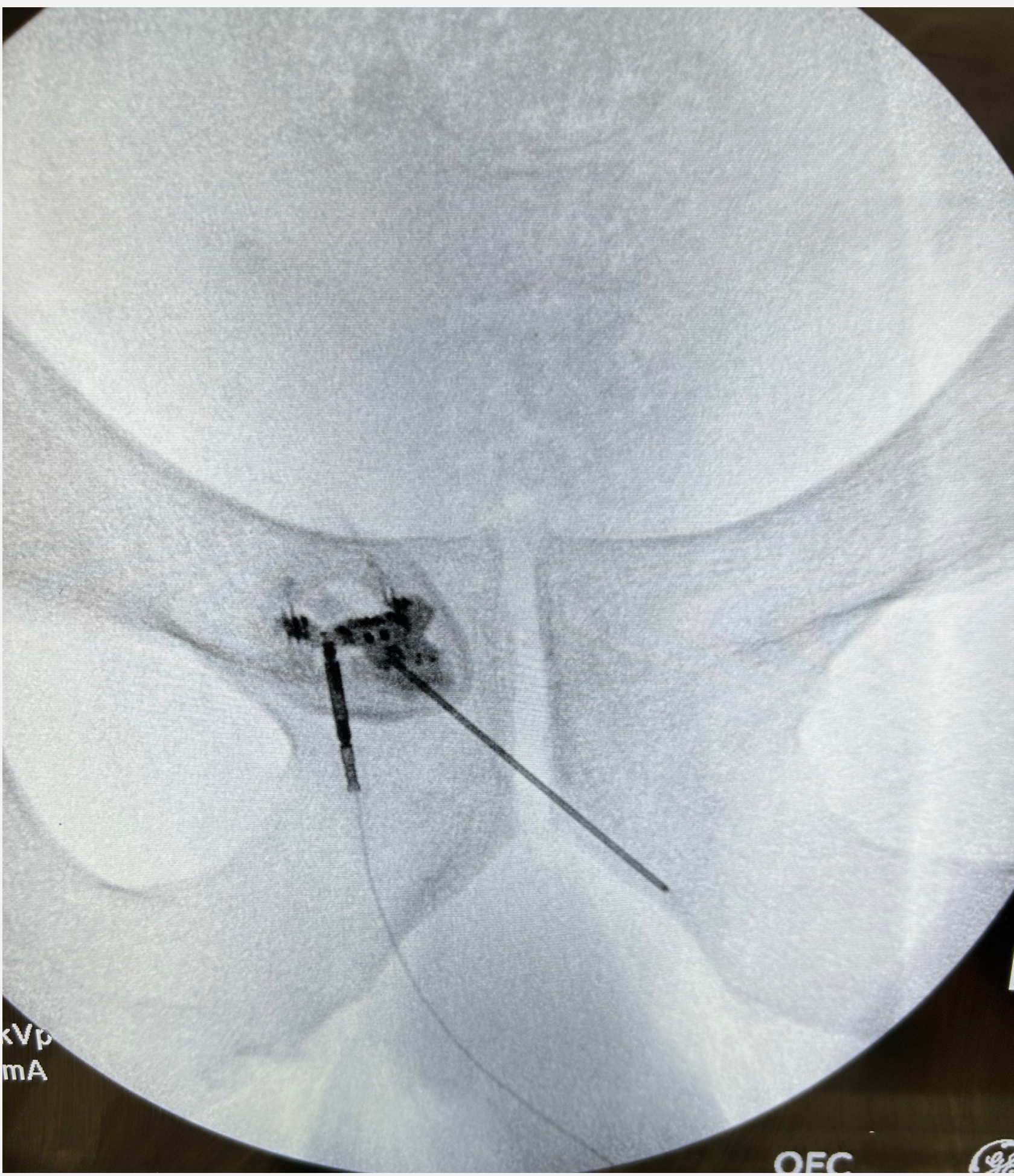


Image 2. PA fluoroscopic imaging showing successful placement for cryoneurolysis of the right perineal nerve in close proximity to the symphysis pubis

Conclusion

- Pudendal neuralgia is a diagnosis that can have devastating effects on individuals and may be difficult to both diagnose and identify
- Patients with chronic SCI may be at higher risk for pudendal nerve dysfunction
- Depending on the severity of SCI, these patients may not have an intact anorectal motor twitch
 - In these cases, targeting the pudendal nerve proximally near the ischial spine and distally in its terminal branches can be utilized to optimize treatment efficacy
- Through an understanding of the anatomy of the terminal branches, the perineal nerve may be blocked distally in close proximity to the symphysis pubis bilaterally under fluoroscopic guidance
- There is a paucity of literature that discusses treating pudendal neuralgia successfully using this methodology
- Future studies are thus required to assess the long-term efficacy and safety of using this approach

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