

RADIATION-INDUCED COCCYDYNIA AND PELVIC PAIN FROM INSUFFICIENCY FRACTURE TREATED WITH GANGLION IMPAR BLOCK

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Background: Pelvic insufficiency fractures can be a delayed effect from radiation therapy. As a result, significant pain, debility, and reduction in quality of life can occur. We describes the utility of ganglion impar blockade in the treatment of coccydynia and pelvic pain related to insufficiency fracture.

Case Report: The patient is a 71-year-old woman with stage 2 grade II endometrial cancer that presented with pelvic and tailbone pain approximately 4 years after completing radiation therapy and was found to have a sacral insufficiency fracture. She underwent ganglion impar blockade on 2 occasions with marked improvement in her pain and functionality after each injection.

Conclusions: Fluoroscopic-guided ganglion impar block may be a safe and useful intervention to reduce pain in cancer patients with pelvic and/or tailbone pain related to insufficiency fracture

Key words: Cancer pain, pelvic pain, tailbone pain, insufficiency fracture, ganglion impar block

BACKGROUND

In the United States, uterine/endometrial cancer is the most diagnosed gynecologic cancer (1). Mainstays of treatment involve surgical resection, chemotherapy, and radiation. While each modality is aimed at either directly removing, shrinking, or eliminating cancer, untoward side effects do occur. Specifically, damage to the bone matrix, insufficiency fractures, and increased pain can occur (2-4). Insufficiency fractures are often asymptomatic but over time may become a source of severe, debilitating pain (5). The ganglion impar block or neurolysis has well-known applications for pain related to pelvic, perineal, and anorectal cancers (6,7). Additionally, it can also be used for pain attributed to coccydynia (8). This block can serve as a useful diagnostic and therapeutic tool for the pain interventionalist treating cancer patients with radiation-induced bony

changes causing pain. We present a 71-year-old woman with coccydynia and pelvic pain secondary to a sacral insufficiency fracture that was treated successfully with ganglion impar blockade.

CASE PRESENTATION

A 71-year-old woman presented to an outpatient pain clinic for referral for chronic back pain and new onset pubic pain. Pertinent history includes stage II grade 2 endometrioid endometrial adenocarcinoma treated surgically with robotic-assisted total hysterectomy, left salpingo-oophorectomy, and bilateral pelvic/inguinal lymph node dissection roughly 4 ½ years prior to presentation. Following surgery, she underwent whole pelvic and vaginal cuff radiation, which was also completed 4 years prior to presentation. On initial consultation in the chronic pain clinic, she complained of a 2-month history

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of progressively worsening hip, pubic, and tailbone pain. Her most severe pain at the time of presentation was the tailbone pain. The patient described the pain as a dull, aching, and throbbing pain exacerbated by prolonged sitting. Due to the severity and progressive nature of her symptoms, she had resorted to ambulating with a rolling walker. Just prior to the consultation, the patient had a computed tomography scan of the pelvis, and lumbar spine, which was notable for a left-sided sacral insufficiency fracture, seen below in Fig. 1. She had been taking both narcotic and nonnarcotic medications with minimal relief. Regarding pain severity, her pain scores, based on the Numeric Rating Scale (NRS-11), at the time of consultation were as follows: Worst - 10/10, Least - 0/10 (with no activity), Average - 6/10, and Current - 1/10. After a detailed discussion, the patient was scheduled for ganglion impar block the following week. Seen in Fig. 2 is the transcoccygeal approach used for the block, with the needle tip traversing the sacrococcygeal symphysis. A 22G 3.5-inch needle was advanced just ventral to the sacrum and the proper location

was confirmed with the injection of a small volume of contrast medium. After negative aspiration, 4 mL of a treatment solution containing 1 mL of triamcinolone (40 mg/mL) and 3 mL of 0.25% bupivacaine was injected. The patient tolerated the procedure well with no post-procedural complications.

One week after the procedure, the patient was called to assess the injection's efficacy and to ensure that no complications had occurred. At that time, she endorsed 50% relief from the injection and noted improved functionality, stating that she was able to ambulate without a walker, which she was not able to do prior to the injection. Incidentally, she also reported improvement in lower extremity edema. At her one-month follow-up visit, she continued to note at least a 50% reduction in her pain and continued improvement in her mobility. Her NRS-11 pain scores reduced compared to her initial consultation as follows: Worst - 5/10, Least - 0/10, Average - 3/10, and Current - 0/10. She subsequently underwent an additional procedure 4 months later with near complete resolution of her pain and improvement in lower extremity edema.

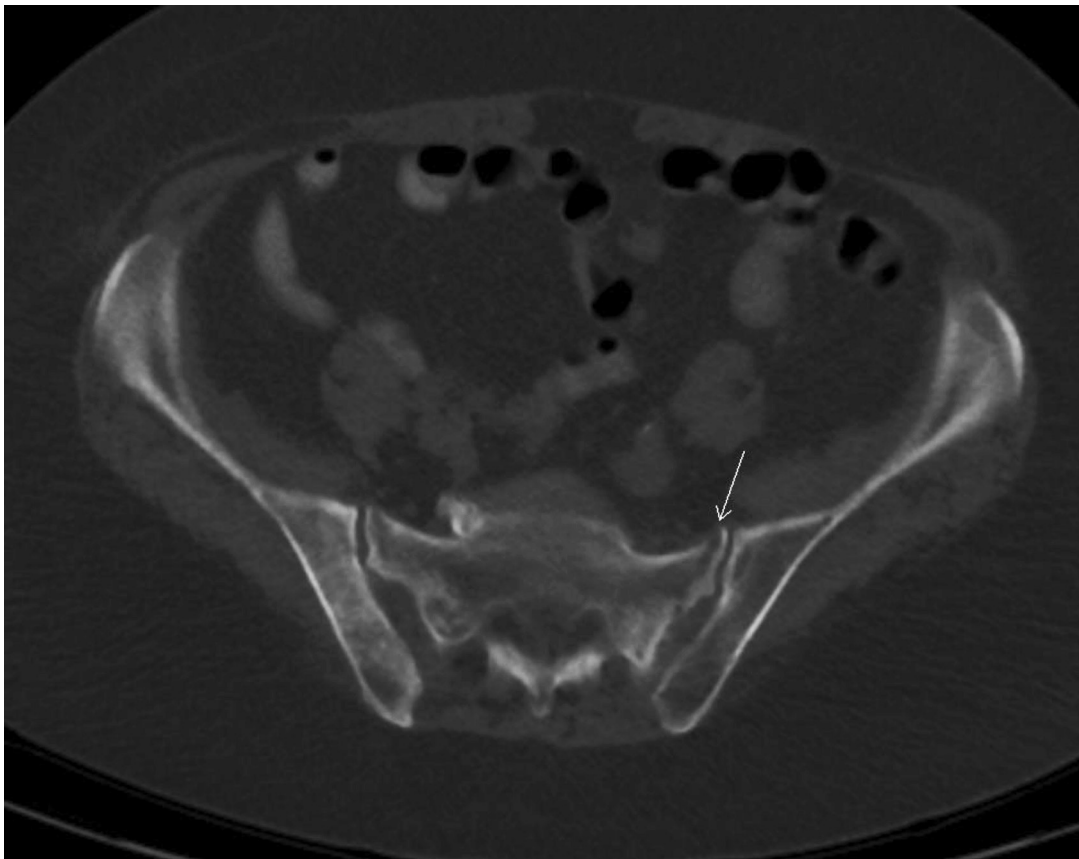


Fig. 1. Pelvic computed tomography with the arrow indicating left sacral insufficiency fracture.

DISCUSSION

Pelvic insufficiency fractures are a known potential complication of radiation therapy. In their meta-analysis, Sapienza et al (5) found that the median time to fracture spanned a range of 7.1-19 months. They also noted the top 2 most common sites for fractures to occur were the sacroiliac joint and body of the sacrum. Additional risk factors include older age and female gender. The impact of pain on quality of life and overall sense of well-being is well documented in the literature. Regarding pelvic fractures specifically, Prieto-Alhambra et al (9) noted increased morbidity and mortality in older patients who sustained such injuries. In a separate study (3), women with anal cancer were found to have 3 times the risk of pelvic fracture after radiation to this area.

Given this risk, the pain practitioner needs to have a high index of suspicion for fracture when evaluating patients with a prior history of pelvic radiation who present with new or worsening pelvic pain. Additionally, consideration for procedural intervention should be discussed with patients. The ganglion impar, or ganglion of Walther, is the midline, caudal termination of the sympathetic chain, providing innervation to the pelvic viscera and perineum. Most commonly used to treat sympathetically mediated pain related to cancers of the anorectal region, distal urethra, and vagina, it

can also be a valuable tool for treating coccydynia (10). The patient demonstrated marked improvement in her pain, functionality, and overall quality of life after each procedure. Interestingly, the patient did not have a coccygeal fracture or identifiable trauma to the coccyx, a common cause of coccydynia (10). Rather, her symptoms progressed from hip pain, and pubic pain, to tailbone pain at the time of presentation at our clinic. A likely explanation for this is referred pain from the known site of pathology in the sacrum. Typically pain originating from the sacroiliac joint can present as low back, hip, gluteal, or thigh pain (11). Additionally, given the severity of her pain, she noted a decline in functional status, which led to a more sedentary lifestyle until the point that even sitting for prolonged periods caused pain. As mentioned, there was also an incidental improvement in lower extremity edema after each block. Lumbar sympathetic blockade (LSB) is a widely used procedural modality for complex regional pain syndrome (CRPS) of the lower extremity. In addition to pain, swelling or edema is often a hallmark sign of CRPS. In a prospective study, Woo et al (12) concluded that LSB was a useful treatment modality for patients with lymphedema resulting from treatment for gynecologic malignancy. Their hypothesis as to the cause was 3-fold: 1) Improved venous flow, thus lessening the strain on the lymphatic

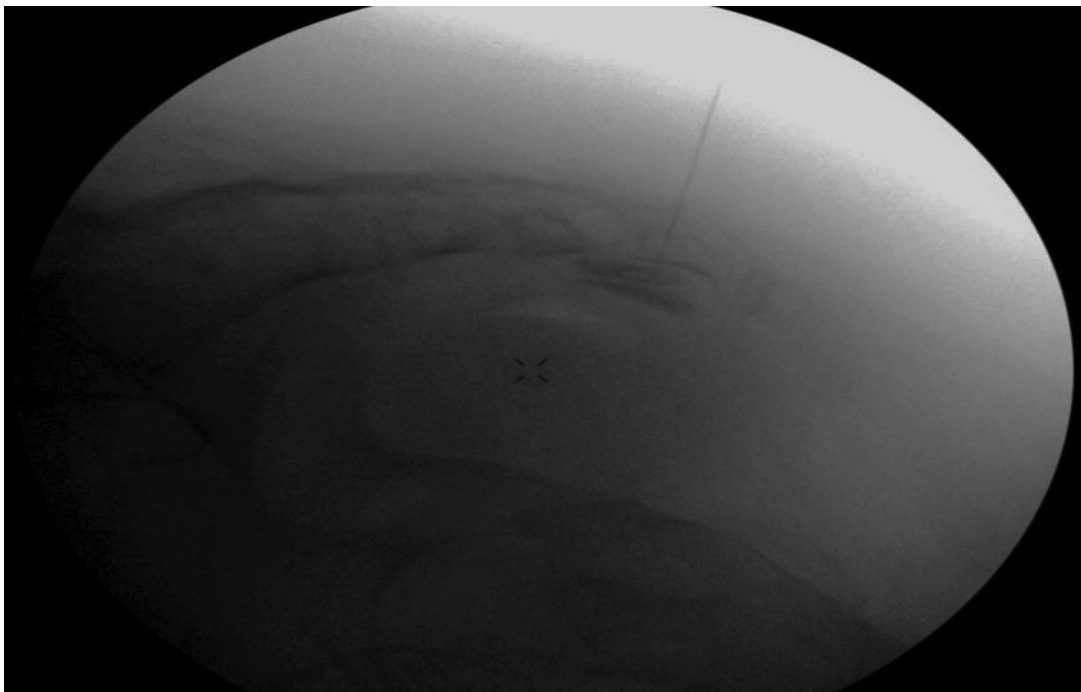


Fig. 2. Lateral fluoroscopic image showing transcoccygeal approach for ganglion impar block.

system; 2) Control of the lymphatic system via autonomic input which can be augmented by blockade; and 3) Reduction in local immune response in the edematous limb (12). It is possible that similar physiologic changes occurred in our patient, leading to a reduction in edema. Another key factor to consider is improved mobility leading to increased muscle contraction and enhanced venous return. In the case of fractures related to prior radiation, this block might be particularly useful given the demographic of mostly elderly patients who may not tolerate the untoward side effects of oral medications.

CONCLUSIONS

Pelvic insufficiency fractures are a possible sequelae

of radiation therapy. Pain associated with fractures has the potential to impair quality of life significantly and may lead to increased mortality. The ganglion impar block should be considered in such patients as an option to reduce pain, increase functionality, and improve the overall quality of life.

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