CASE REPORT

Impar ganglion radiofrequency application in successful management of oncologic perineal pain

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Abstract

Impar ganglion is a solitary ganglion located retroperitoneally at the end of paravertebral sympathetic chain and usually in front of sacrococcygeal joint. Solitary or metastatic tumour in the surrounding tissues causes poorly localized pain. This case report presents a 75-year old male patient with colon cancer, whose severe pain during defecation could not be controlled with conventional high-dose opioid application but with transcoccygeal radiofrequency thermocoagulation. Radiofrequency thermocoagulation is promising not only for chronic pelvic pain control but also in pelvic pain secondary to malignancy particularly when the ganglion is localized by radiologic imaging techniques.

Keywords: Cancer, Electrocoagulation, Ganglion, Sympathetic, Therapy: pain management, Thermocoagulation.

Introduction

In colon, cervix, vagina, vulva, ovary, prostate cancers, pressure and invasion of the solitary/metastatic tumour cause poorly localized pain in perianal or perineal tissues particularly during defecation. High-dose opioids applied for pain control cause constipation and increases pain during defecation even more. It is usually problematic to break this vicious circle and control pain.[1]

Impar ganglion is a solitary ganglion located retroperitoneally at the end of paravertebral sympathetic chain, usually in front of sacrococcygeal joint. Afferent sensory fibers of perineal, distal rectum, anus, distal urethra, vulva, distal 1/3 of vagina end here. Successful but transient pain control by blockage of this ganglion is possible.[2,3]

Percutaneous radiofrequency (RF) thermocoagulation application can provide long-standing effect in chronic pain. It damages relevant nerve or ganglion by 80°C heat. However, at present there are only case reports on its application in pelvic pain secondary to malignancy.[4]

The aim of this case report is to present a patient with colon cancer, whose severe pain during defecation could not be controlled with conventional high-dose opioid application but with transsacrococcygeal radiofrequency thermocoagulation.

Case Report

A 75-year old male patient with colon cancer operated 9 months ago was referred to our clinic due to severe and progressive pain, which started 6 months after surgery. His chief complaint was progressively increasing pain despite using tramadol 200mg/day, transdermal fentanyl 300µg/3day, pregabalin 300mg/day and various nonsteroid anti-inflammatory drugs. His daily life and sleep were affected severely. He also complained of persistent constipation unresponsive to laxatives medications. He had syncope 2-3 times due to severe pain. The patient defined his pain during defecation as unbearable and 9-10 on the visual analogue scale (VAS).

The patient was scheduled for impar ganglion RF application. Following venous access, he was taken to the intervention unit and placed in prone position after routine haemodynamic monitorisation. A pillow was placed under the superior iliac spins in order to flatten lumbar lordosis. Sacrococcygeal region was sterilized and draped. Sacrococcygeal junction was localized by the guidance of fluoroscopy. After local anaesthesia of cutaneous and subcutaneous tissue by 1% lidocaine, a 22G spinal needle was pushed forward until the frontal face of sacrum was felt. Two milliliters iohexol was injected and the needle was verified in front of sacrum by anterior-posterior and lateral imaging and that it was not in the epidural or vascular tissue. Six ml of 0.25% bupivacaine, 40mg methylprednisolon acetate was injected. The vitality signs showed a stabile course during the intervention and no complication was detected. Ten minutes after completion of the intervention, the patient defined pain as 1-2 on VAS. The patient's pain was 7-8 on VAS, at hour-24 control. It was then decided to apply radiofrequency thermocoagulation by transsacrococcygeal method in order to prolong the pain control.

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Figure: Lateral fluoroscopic imaging.

The patient was taken to the intervention unit for radiofrequency thermocoagulation and similar preparations were performed again. Radiologic evaluation showed that the ganglion was located on the direction of sacrococcygeal joint and sacrococcygeal interface was located on the mid-line by the guidance of fluoroscopy. Cutaneous, subcutaneous tissues were anaesthetised locally by injection of 3-4 ml 1% lidocaine. A 22G spinal needle was entered through the point, which was previously marked by fluoroscopy and was pushed forward within the disc until the frontal face of sacrum (presacral area) was felt. Then the spinal needle was taken out and 22 G RF cannula (100 mm, with a 5mm active tip, Cosman Medical, Inc. Burlington, USA) was placed at the same point. Two milliliters non-ionic radio contrast (iohexol) was injected and intravenous or epidural localization was avoided by the help of A/P and lateral fluoroscopic imaging (Figure). A RF disposable electrode (TCD-10P, Cosman Medical, Inc. Burlington, USA) was placed through the cannula. The electrode was connected to RF generator (Cosman G4, V2 RF Generator, Cosman Medical, Inc. Burlington, USA); the impedance was measured and recorded as 295 ohm. Upon the negative response to the applied 50 Hz sensorial and 2 Hz motor stimulation tests 6 ml 0.25% bupivacaine was injected and thermocoagulation was applied for 90 seconds each at 60 C, 65 C, 70 C, 75 C, 80 C, respectively. The intervention was well tolerated by the patient as the temperature rose gradually and the patient didn't report any pain. After completion of the intervention, the RF cannula and the electrode were taken out. The patient didn't report any pain during the post-intervention first 10 minutes and no complication was noted. At the 24-hour control, the patient defined the pain as 1-2 on VAS and the patient was then discharged from the hospital.

At the 1-month control, the patient defined the pain as 2-3 on VAS. He was taking only 200mg tramadol/day, did not complain of constipation or increase in his pain during defecation.

Discussion

Control of perineal pain secondary to malignancy is not only difficult but also treatment options are limited. High-dose opioids applied through oral, parenteral or neuroaxillary techniques result in over sedation and increase pain due to constipation.[1] Interventional methods may be required in early phases as pain control in these patients by conventional methods is difficult.

Impar ganglion is the transaction point of sympathetic efferent, nociceptive afferents of perineal region. Blockage of this ganglion was first documented by Plancarte in 1990 through transanococcygeal ligament, and followed by reports of blockage through transsacrococcygeal, paramedian, paracoccygeal techniques.[5] The transsacrococcygeal approach defined by Wemm,[6] has become popular due to the ease of positioning the patient as well as the needle. However, variations have been shown in anatomical studies in the localization of this ganglion between the sacrococcygeal joint and coccyx end.[7,8] It is mostly located in front of the sacrococcygeal joint and coccygeal vertebra. This variation in localization explains the variations in the success of this intervention. It is suggested that localizing the ganglion prior to the intervention by the radiologic imaging techniques increases the success.[9]

Blockage of impar ganglion provides fast but short-living pain control in cancer cases, which limits its usage. Repetitive local anaesthetic and steroid injections bear a risk for infection and also for increase in blood glucose, suppression of immunity and arthritis. Moreover, anococcygeal technique has severe risks such as rectum perforation and invasion by local tumour.[2]

Duration of pain control can be prolonged by chemical neurolisis of the ganglion. However, there are major complications of chemical neurolisis in cancer cases such as uncontrolled dissemination of the neurolytic agent in the presacral area and resultant loss in sexual, bowel, bladder motor functions as well as neuritis and neuralgia.[2,5] It is clear that any of these complications will affect life comfort seriously.

Radiofrequency application is related with more selective neurolisis with minimal side effects in comparison to alcohol, and phenol. It has been reported to provide more

than 50% decrease in pain scores for a period longer than two months in benign chronic cases.[9] Successful chemical and radiofrequency applications have been documented particularly in chronic coccydynia cases by the transsacrococcygeal technique.[5,9,10] This case report documents radiofrequency thermocoagulation application through transsacrococcygeal way following radiologic verification of location of the ganglion on the direction of sacrococcygeal joint in a case of unbearable, unresponsive pain related to colon cancer. Post-interventional controls indicated decreased VAS values, need for opioids and increased life quality.

Conclusion

As a conclusion, this case report emphasizes the potential of this technique for successful control of chronic pelvic pain particularly when the ganglion is localized by radiologic imaging techniques. However, prospective, controlled, randomized studies may provide better clarification of its utility for pain control in cancer patients.

References

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