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CASE REPORT

Fluoroscopy-guided transdiscal superior hypogastric plexus neurolytic block in chronic pelvic pain: A needle passing to the contralateral side

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SUMMARY

The superior hypogastric plexus (SHP) contains afferent nociceptive fibers from the pelvic structures, thus the SHP block is employed in the chronic pelvic pain (CPP) treatment in patients who do not respond to conservative treatments. A 60-year-old female patient, who did not respond to conservative treatment, underwent SHP neurolytic block after a successful diagnostic block. An excessive oblique angle approach was applied due to physical restrictions, the needle passed through the intervertebral disc resulting in the contralateral side SHP block, and the procedure was also repeated to the other side SHP. After the procedure, improvement in the patient's NRS score and a decrease in urination frequency were detected, and these positive effects were preserved for 3 months. SHP block is a safe alternative interventional procedure in patients with CPP. If an excessive oblique angle is applied during the procedure, the needle may cross the midline, resulting in a contralateral blockage.

Keywords: Chronic pelvic pain; nerve block; pain management.

Introduction

Chronic pelvic pain is a common health problem in society, negatively affecting the quality of life. Particularly, it is estimated that 6% to 24% of women are affected.[1,2] The etiology of pelvic pain is diverse, and the cause usually remains unexplained.

SHP plexus block, which is one of the alternative interventional pain treatments, is recommended in patients who do not respond to conservative treatments.[2–5] The first SHP block was described by Plancarte et al.[4] with a two-needle posterior approach under fluoroscopy. The transdiscal technique is often preferred because it is convenient, comfortable, and bears a lower probability of organ and vascular injury.[6] On the other hand, SHP may cause rare complications such as discitis and disc degeneration. SHP blockage is performed bilaterally or unilaterally if a contrast agent dispersion pattern is observed at around the midline on the anterior side of the vertebral bodies. Fluoroscopy imaging is performed at a recommended standard approach with 25–35 degrees oblique and 10–15 degrees cranial angle tilts.[7] Although the oblique angle is crucial for entering the disc by positioning the facet joint at the midline, excessive angle application may result in a contralateral SHP blockage without an intended ipsilateral block.

Hence, we would like to present a case in which a contralateral side cross of the needle tip was observed during a fluoroscopy-guided intradiscal SHP neurolytic block in a patient with CPP.

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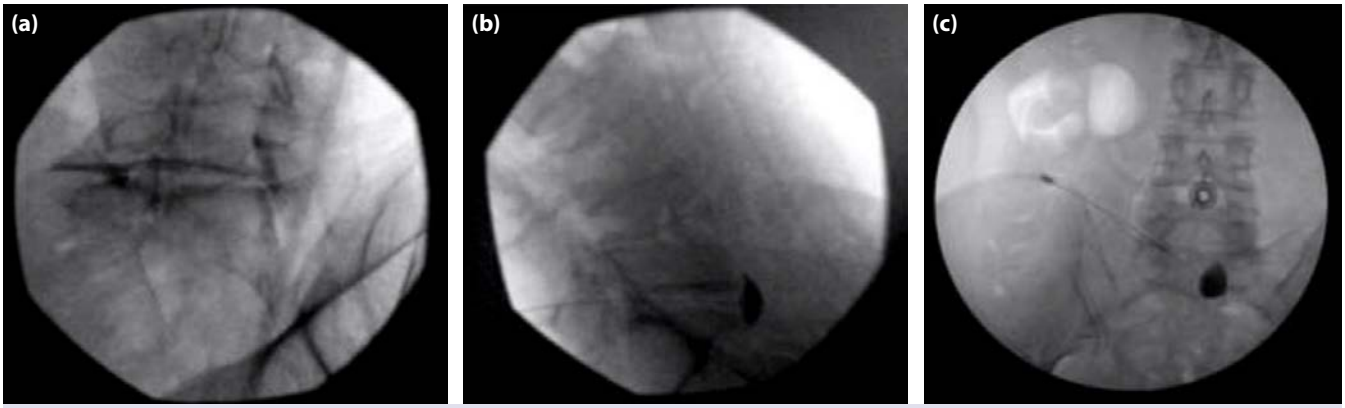

Figure 1. Fluoroscopy guided superior hypogastric plexus block. **(a)** Co-axial oblique view **(b)** lateral view and conrast flow **(c)** AP view, contralateral needle and contrast flows.

Case Report

A female patient in her early 60s was referred from the Urology clinic to our center due to CPP. The patient had dysuria, frequent urination, and pain in the lower abdomen for many years. The patient had a cystocele repair operation 10 years ago. Through the years, the patient underwent several invasive diagnostic tests and an intravesical botox application, none of which alleviated the symptoms.

Since pregabalin 2x150 mg and duloxetine 60 mg 11 treatments failed to provide pain reduction, SHP block was planned and applied using 8 mL 0.5% bupivacaine and 80 mg triamcinolone in February 2020. The patient had a pain-free period for a month. Additionally, reduction in dysuria and improvement in frequent urination were achieved. Accordingly, an SHP neurolytic phenol block was planned under fluoroscopic guidance. Prophylactic 1 g of ceftriaxone was administered intravenously 30 minutes before the intervention to prevent discitis since the transdiscal approach was considered in this case.

The patient was positioned prone, and a pillow was placed under the abdomen to flatten the lumbar lordosis. The fluoroscope was rotated 35 degrees obliquely and was centered on the lumbosacral junction. Then the fluoroscope was located at a cephalad angle of 30 degrees, and the L5/S1 disc was targeted. All the procedures were performed under sterile conditions. The patient was sedated via intravascular 0.1 mg/kg midazolam and 0.1 µg/kg fentanyl delivery. Blood pressure, heart rate, and peripheral oxygen saturation were continuously monitored.

Local anesthesia was applied to the skin and the subcutaneous tissues utilizing 2% lidocaine. Then, a 22-G, 15-cm block needle was inserted by tunnel view and advanced carefully lateral to the inferior aspect of the facet joint and towards the disc. When disc contact was established, a lateral view image was acquired, and the needle was advanced further carefully. When the needle tip reached the anterior side of the L5-S1 intervertebral disc, 3 mL of iohexol was administered to verify its final position (Fig. 1).

Following the AP image acquisition, it was observed that the needle had a contralateral SHP spread (Fig. 1), and 5 mL of 10% aqueous phenol injection was performed. The same procedure was repeated on the other side, and contrast spread was observed on the other side too.

While the NRS score of the patient was 10 before the procedure, it was reduced to zero following the procedure. The patient's NRS scores at the 3rd week and at the 3rd month were noted as 2 and 4, respectively. Additionally, improvements were noted in the patient's complaints of dysuria and frequent urination.

Discussion

The current case report demonstrates that short-term relief from CPP symptoms could be achieved for up to 3 months by contralateral SHP phenol block in a patient experiencing CPP unresponsive to regular intravesical or oral medications. Since fluoroscopic imaging was performed with an excessive oblique angle in the transdiscal approach, the contrast spread was expected to be limited to the ipsilateral side. Instead, the contrast spread was observed on the contralateral side. Therefore, the same procedure

was repeated for the other side to achieve bilateral SHP block. There were no complications during or after the procedure, and consent form was obtained from the patient to publish this report.

SHP block is also used in the treatment of non-malignant pelvic pain. Hasoon et al.[2] found an 80% pain relief lasting approximately 4 months after SHP block in a patient with CPP. Bosscher et al.[3] performed SHP neurolysis and considered treatment success as if pain relief was more than 50% or lasted longer than a month. After treatment, 50% or more improvement was achieved in 36% of patients. Pollitt et al.[5] performed neurolysis of SHP in a woman with severe debilitating pelvic pain related to endometriosis. After the procedure, the pain was relieved completely, and no recurrent pain was reported in the 2nd, 6th, 12th, and 24th month follow-ups. The Oswestry Disability Index score was improved from 37 to 5 at the 24th month follow-up. There were no functional limitations, and the patient was able to return to work.

In the current case, the NRS score of the patient decreased from 10 to 0, and the NRS score was 4 at the 3rd month follow-up. The frequent urination and dysuria were absent after the procedure for 3 months.

SHP is anatomically an extension of the aortic plexus in the retroperitoneal space below the aortic bifurcation. It is situated on the anterior aspect of the L5-S1 intervertebral disc and is divided into a right and a left trunk. Therefore, both sides must be blocked separately or the contrast material should be dispersed around the midline on the anterior side during a single intervention to achieve a complete bilateral blockage.[8,9]

Ipsilateral imaging at 25–35 oblique angle and 10–15 degrees cranial angle is recommended as the standard angles in this method.[7] Depending on the presence of scoliosis, advanced degeneration, or certain anatomical variations, modifications can be made in the angle to provide an optimal view as performed in the current case. The excessive oblique angle is applied to target the superior articular process in the midline to reach the disc. This angle tilt causes the iliac crest to shade the image, in addition to the blockage of the contralateral side superior hypogastric trunk.

In the current report, since an excessive oblique angle was applied during the fluoroscopy procedure, the needle passed through the disc to the contralateral side. Thus, the same procedure was repeated on the other side to achieve a successful SHP blockage since bilateral midline dispersion of the administered contrast material was not observed during the procedure. In the block procedure, which was performed a month ago, the needle did not pass to the contralateral side, and excessive angulation during the neurolytic block may be due to a change of the physician performing the procedure. Blockage at an excessive oblique angle may lead to bilateral intradiscal intervention by reducing the possibility of the neurolytic agent to disperse around the midline.

Unfortunately, bilateral applications increase radiation exposure due to prolonged procedure time. Furthermore, double penetration to the disc may increase the risk of possible complications such as discitis and disc degeneration. Accordingly, it is recommended to enter the disc at a minimum oblique angle, and further research is needed to determine the optimum angles which may enhance single interventions aiming for bilateral SHP blockage.

Conclusion

Neurolytic SHP block is a safe alternative interventional procedure that reduces pain and frequent urination in the short-to-medium term in patients with CPP. If an excessive oblique fluoroscopy angle is adjusted during the SHP block procedure, the needle may cross to the opposite side due to the excessive angle, resulting in an isolated contralateral side block.

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