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Ganglion impar block in patients with chronic coccydynia

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Abstract

Introduction: Coccydynia refers to pain in the terminal segment of the spine caused by abnormal sitting and standing posture. Coccydynia is usually managed conservatively; however, in nonresponsive patients, ganglion impar block is used as a good alternate modality for pain relief.

Aim and Objective: The aim of this article is to study the effect of ganglion impar block in coccydynia patients who were not relieved by conservative management.

Materials and Methods: This prospective study was conducted at the postgraduate department of Orthopedics, Govt. Bone and Joint Hospital, Barzillai, Srinagar an associated Hospital Govt. Medical College Srinagar from January 2019 to December 2019. In this study 22 patients with coccygodynia who had not responded to conservative treatment were enrolled.

Results: A significant decrease was found in the mean VAS scores from 9 to 1.20 at the follow-up of 12 months. Following the 22 technically successful, 21 (95.45%) had at least 50% relief. During the injections, one patient developed vasovagal symptoms and flushing after the procedure. No other side-effects or complications were encountered during the follow-up.

Conclusion: Ganglion impar block shows the long-term effectiveness for patients with coccydynia in providing pain relief by the trans-Sacro-coccygeal “needle inside needle” technique.

Keywords: Coccydynia, ganglion impar block, trans-Sacro-coccygeal approach, VAS score

Introduction

Coccydynia characterized by persistent pain in the coccygeal area and was first described by Simpson in the 19th century^[1]. It accounts for less than 1% of non-traumatic problems of vertebral column^[2] and is believed to be caused by hypermobility or subluxation of coccyx, with an associated, chronic inflammatory response^[3].

The most common etiology is fracture, subluxation, and abnormal mobility of the coccyx due to trauma^[3, 4]. Degenerative joint diseases, infectious conditions, and pelvis-anorectal cancers are among the other causes^[5]. Average age of onset is shown as 40; and the prevalence is 5 times higher in women than men^[6].

An array of treatment options are available for this painful condition starting from conservative treatment options to modern interventional procedures. Conservative treatment such as non-steroidal anti-inflammatory drugs (NSAIDs), local analgesics, hot or cold application, transcutaneous electrical nerve stimulation (TENS), modified wedge-shaped cushions (coccygeal cushions), and levator ani relaxation exercises are available^[7, 8]. However, in nonresponsive patients, direct injections around the coccyx, caudal epidural blocks, ganglion impar blocks, neurolysis and coccygectomy can be applied for pain relief.

Ganglion impar (Walther ganglion) is a sympathetic ganglion that is situated in the retroperitoneal space behind the rectum around the sacrococcygeal joint or directly in front of the coccyx^[9]. The block of this ganglion can be performed with fluoroscopy, computerized tomography, or ultrasound guidance.

A ganglion impar block is a procedure performed to help relieve chronic pain in the tailbone (called coccygodynia), pelvis or anorectal area. Coccygodynia can arise due to trauma to the tailbone such as a fall on the bottom or with pressure during pregnancy or childbirth. The ganglion of impar is a network of nerves that are located just anterior to the tailbone and supplies some of the function and sensation to the anorectal region and tailbone.

The interventions used in this study have undergone modifications, and the most advanced “needle inside needle” technique is in vogue and was used in this study.

This paper studies the effect of ganglion impar block in coccydynia patients who were not relieved by conservative management.

Materials and Methods

This prospective study was conducted at the postgraduate department of Orthopedics, Govt. Bone and Joint Hospital, Barzillai, Srinagar an associated Hospital Govt. Medical College Srinagar from January 2019 to December 2019. In this study 22 patients with coccygodynia who had not responded to conservative treatment were enrolled. Inclusion criteria were: intractable pain over the coccyx, despite conservative treatment for at least 6 months; and no abnormalities on laboratory findings or imaging that explained the pain. Exclusion criteria were presence of local infection, bleeding diathesis, contrast allergy, previous surgery to lumbar region, sacrococcygeal joint fusion, diabetes mellitus (uncontrolled despite medication) and pregnancy.

Procedure

All patients underwent fluoroscopy-guided trans-Sacro-coccygeal ganglion impar block. The procedure was done with patients in prone position, on the table with a pillow under the abdomen to overcome lumbar lordosis. The intergluteal area was prepared with sterile aseptic precautions. A 22-gauge spinal needle was used to reach the ganglion impar. After injection of contrast material and confirming the position of needle, 2 mL of 0.5% lignocaine, 2 mL saline, and 1 mL (40 mg) of methylprednisolone were injected in the area.

Pain intensity was evaluated using a visual analog scale (VAS). According to the VAS, patients were asked to rate their pain from 0 to 10 (with 0 as the lowest, no pain, and ten as the highest, worst pain ever experienced). Treatment success of PRF was defined as 50% or greater pain relief after 3rd month after the procedure according to the first evaluation. There were no patients who were excluded due to the procedural failure.

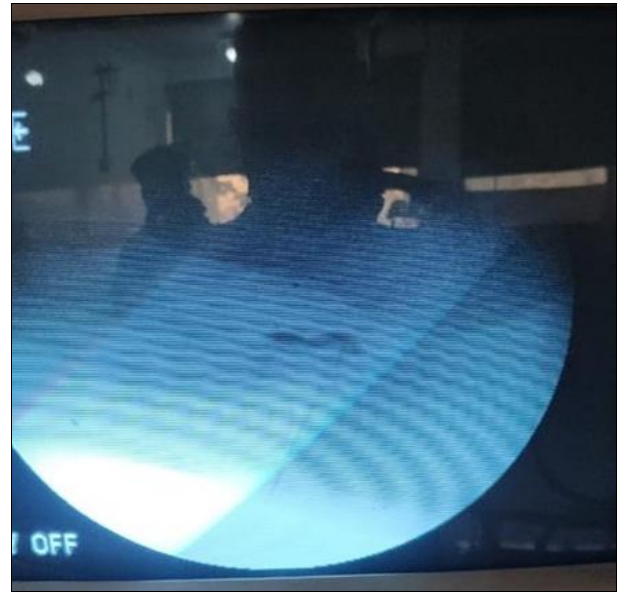


Fig 1: Lateral fluoroscopy view of the ganglion impar.

Results

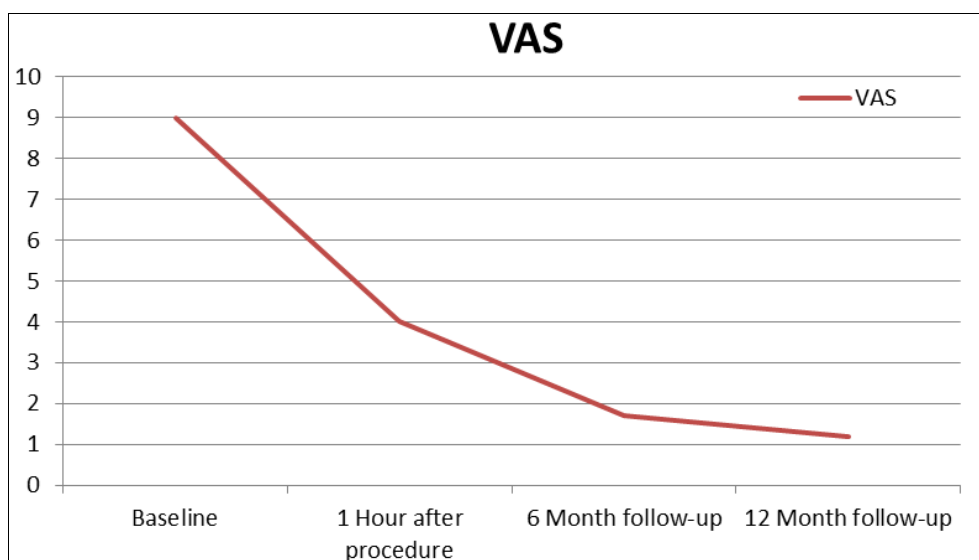
The mean age of the study population was 51.70 (range 23-67) years. The study included 3 (13.64%) male and 19 (86.36%) female patients. 7 (31.82%) patients had a history of trauma (mostly defined as falling on coccyx region) before the onset of pain. The mean duration of symptoms was 9 months (between 1 and 17 months).

GI block through a trans-sacro-coccygeal approach took a mean duration time 23.10 ± 3.98 (range 15-33) minutes. The mean hospital stay was 2.80 (range 1-3) hours.

Mean VAS score before treatment was 9 [range 8–10]. A significant decrease was found in the mean VAS scores (Graphic 1). The mean postoperative VAS score at the 12th month follow-up was 1.20.

Following the 22 technically successful injections, 1 (4.55%) patient had no relief, but 21 (95.45%) had at least 50% relief.

During the injections, one patient developed vasovagal symptoms and flushing after the procedure. No other side-effects or complications were encountered during the follow-up.



Graph 1: Decrease in Visual Analog Scale (VAS) scores for coccydynia in time

Discussion

Coccydynia is a pain radiating to the sacral and perineal area, located around the coccyx. The cause of the pain is often unknown and is a clinical condition having varied etiology and no definitive diagnostic criteria exist till date [10]. Although many reasons have been blamed in the etiology of coccydynia, major cause has been evaluated as trauma in many studies, with the rate varying between 40% and 70% [9, 11-13]. In the present study, this rate was found to be 31.82% which is less comparable to other studies.

The ganglion impar is a retroperitoneal structure at the level of the sacrococcygeal junction, which marks the termination of the paravertebral sympathetic chain. A ganglion impar block is usually considered to treat coccydynia which is non-responsive to other conservative treatments. To confirm the efficacy of the block, a diagnostic ganglion impar block with local anesthetic can be given. The pain relief is achieved by the blockade of nociceptive as well as sympathetic fibers [14]. The success of the ganglion impar block may prove to be an effective treatment modality for long-term relief from coccydynia, as seen in 21 (95.45%) patients in this study.

The technique used in our study was trans discal “needle inside needle” technique which is considered to be a relatively safe approach is better than the classical and paramedian approach to the ganglion and is a technically feasible method which is easy to learn and perform. There is minimal risk involved in this technique compared to surgical treatment. The complications of this technique are neuritis and inadvertent injection of the neurolytic agent into the rectum, which can be avoided by meticulous care. All the patients required only one attempt without any difficulty. The technique was originally described by Wemm and Saberski [15] and then modified by Nebab and Flonehce [16].

In this study the mean age of study population was comparable to previous studies. With respect to age and gender, the patients in the present study were comparable to those described in the literature. Coccydynia is encountered five times more frequently in female gender than male gender. Women have more posteriorly located sacrum and coccyx, so they may be more exposed to this phenomenon [6, 14]. The occurrence of a sacrococcygeal ligament injury during vaginal delivery can also cause pain.

For a condition that is otherwise very difficult to treat, our experience with ganglion impar blocks as a treatment is encouraging. These blocks are not curative but appear to have worthwhile palliative effects. The success rate for achieving substantial relief of pain is high, and many patients enjoy sustained relief. If relief ceases, it can be reinstated by a second injection, with a high likelihood of success.

The success of this modality of treatment in achieving pain relief was encouraging, however, a longer follow-up time is required to assess the efficacy of a single time injection. In addition, repeat injections and their effectiveness in patients who do not have adequate pain relief, warrant more studies with larger sample size and longer study period.

The limitation of the study was the absence of a control group for comparison. The follow-up period was only 12 months considering the resources; however, further information could have been obtained if the follow up period was longer to note the lasting effect of ganglion impar block.

Conclusion

Ganglion impar block shows the long-term effectiveness for patients with coccydynia in providing pain relief by the trans-Sacro-coccygeal “needle inside needle” technique. Fluoroscopically guided trans-Sacro-coccygeal ganglion impar block may offer a safe and effective treatment option for chronic coccydynia.

Conflict of Interest: Not available

Financial Support: Not available

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