

## Ischiorectal Abscess Under Bilateral Pudendal Nerve Block for Perioperative Analgesia in a Patient with Severe Ischaemic Heart Disease- A Case Report

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### Abstract

Anorectal abscess, an infection in the anal area is a potentially debilitating and painful condition requiring urgent drainage to prevent septicemia. Commonly performed under neuraxial anaesthesia, we report surgical drainage of bilateral ischiorectal abscess under bilateral pudendal nerve blocks and general anaesthesia in a patient with severe ischaemic heart disease. Through our case we add to the existing literature, the importance of administering peripheral nerve block in highly co-morbid patients.

**Keywords:** Anorectal abscess, Bilateral pudendal block, Severe ischaemic heart disease.

### Introduction

Anorectal abscess, an infection in the anal area and remains one of the more common anorectal conditions, and the incidence is 16.1-20.2 per 100,000 per year [1]. Based on anatomic location they are classified into perianal, ischiorectal, intersphincteric, and supralelevator types. Patient presents with pain of acute onset and swelling in the perianal region requiring an urgent surgical drainage [1].

In the last few years, India has seen exponential growth in high-risk patients with comorbidities [2], hence anesthesiologists are facing a new challenge to provide perioperative analgesic management in highly co-morbid patients. Studies have compared general, neuraxial, and regional anaesthesia with sedation for rectal surgery, the latter being described as safe and effective, with the advantage of decreasing the stay in the recovery room [2].

We report surgical drainage of bilateral ischiorectal abscess under bilateral pudendal nerve blocks and GA in a patient with severe ischaemic heart disease.

### Case report

A 55-year-old male was admitted for radicular lower limb pain and was suggested decompression laminectomy. Since he complained of perianal pain, a surgical evaluation revealed bilateral ischiorectal abscess and was posted for drainage of abscess. A re-consultation with spine surgeon and radiologist revealed spondylodiscitis at L4-L5 level with no neurological deficit in perianal area. Patient was a known case of ischaemic heart disease. Previous angiogram reports mentioned triple vessel disease with 90% obstruction in RCA, LCX 60% and 50% obstruction in LAD. Recent, 2D Echocardiography revealed EF (ejection fraction) 35% with akinetic inferior wall abnormality. Haemogram and chest radiograph were normal. On examination, BP (blood pressure) was 148/100 mm Hg, P (pulse) -110/min and SpO<sub>2</sub> (saturation) 96%. Patient was on dual antiplatelet with a combination of aspirin 75 mg, clopidogrel 75 mg and atorvastatin 10 mg, antihypertensive drugs isosorbide mononitrate 30 mg, telmisartan 40 mg and hydrochlorothiazide 12.5 mg.

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Patient's counselling was done, an informed high-risk consent was obtained for surgical procedure to be performed under a general anaesthesia and bilateral pudendal block for perioperative pain relief. A 18G intravenous canulae was secured on the dorsum of the left hand. All monitors as per ASA standards were attached; additional right radial arterial cannulation was performed for monitoring arterial blood pressure.

Patient was positioned in left lateral decubitus and a real-time ultrasound (US) scan of the bilateral pudendal nerve was accomplished with a curvilinear probe (sonosite M turbo 2 – 5 MHz.). The transducer was placed on the medial half of the line connecting the posterior superior iliac spine and the greater trochanter and was shifted in the same plane till the level of ischial spine. At the level of ischial spine, deep to the sacrotuberous ligament, and superficial to the sacrospinous ligament, colour doppler identified the internal pudendal artery, medial to which lies pudendal nerve (Figure 2). Under local anaesthesia a 100 mm stimuplex needle was inserted in plane approach from medial to lateral direction (Figure 1) Injection ropivacaine 0.2% 5 ml with 15 mcg clonidine was deposited medial to the pudendal artery targeting the pudendal nerve (Figure 2). Procedure was repeated on the contralateral side in the same position using similar volume and drug concentration.

Assessment of successful sensory pudendal nerve block, the NRS reduced to 2/10 from 9/10. Motor block of sciatic nerve was excluded with ankle movements. (plantar flexion, dorsiflexion, inversion and eversion)

General anaesthesia was induced with fentanyl 1 mcg/kg, etomidate 0.3 mg/kg and airway were secured with laryngeal mask airway (Ambu # 4). Anaesthesia was maintained with nitrous in oxygen (50:50) and sevoflurane through closed circuit.

Patient was given lithotomy position, and under sterile

preparation, procedure was performed. Throughout the surgical procedure, heart rate and arterial blood pressure did not increase 20% of baseline. No additional iv fentanyl were required in the intraoperative period. IV paracetamol 1 g was administered 30 minutes prior to extubation and continued every eight hours. Injection tramadol 50 mg was prescribed as rescue analgesic. In PACU patient's visual analogue score (VAS) was 1 to 2. A 24 hours observation in the ward did not reveal VAS >4, and no rescue analgesic was required.

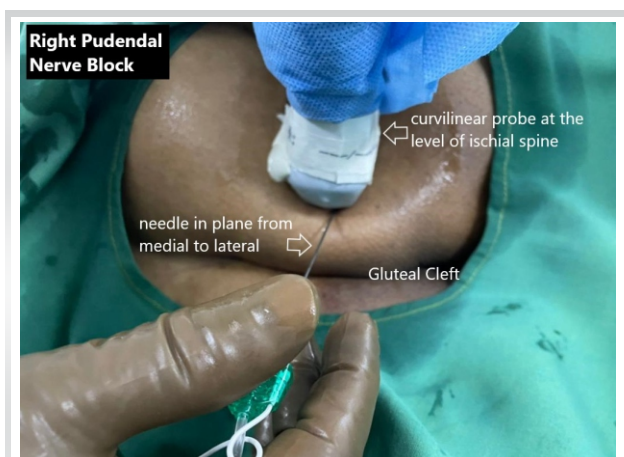
Patient was discharged on postoperative day two without any neurological deficits and on oral analgesic medications.

## Discussion

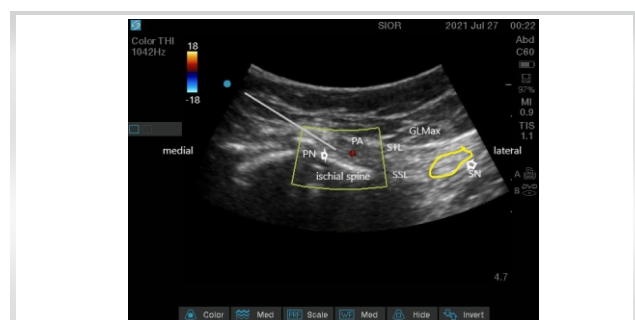
Increasing number of patients diagnosed with IHD require non-cardiac surgical interventions [3]. Unstable perioperative haemodynamics related to inadequate analgesia can lead to increased risk of myocardial ischaemia, myocardial infarction (MI), conduction disturbances and mortality during the peri-operative period [3]. Regional anaesthesia decreases the incidence of complications in high risk /comorbid patients [2]. Specific regional anaesthesia techniques for perianal surgeries include saddle subarachnoid block, caudal epidural, pudendal nerve block and local infiltration techniques [3].

ASRA advisory suggest avoidance of neuraxial techniques for patients on antiplatelet therapy [4]. In presence of infection/inflammation local anaesthetic infiltration was avoided; also, it requires large volume of local anaesthetic.

Pudendal nerve is the biggest nerve of pudendal plexus, emerging from S2, S3 and S4 nerve roots. Pudendal nerve blocks are implemented in obstetric vaginal delivery, anorectal procedures. The pudendal nerve emerges from the S2-4 nerve roots and travels between the sacrospinous ligament and sacrotuberous ligament. Anatomically it lies just medial to the pudendal artery at the level of ischial spine.



**Figure 1:** In-plane needle insertion from medial to lateral direction for pudendal nerve block.



**Figure 2:** Showing needle direction towards pudendal nerve. GLmax: Gluteus Maximus; STL: Sacrotuberous ligament; SSL: Sacrospinous ligament; PN: Pudendal nerve; PA: Pudendal artery; SN: Sacral nerve

A cadaveric study demonstrated the internal pudendal artery located 13.4 mm medial and 7.4 mm lateral to the ischial spine. The pudendal nerve closely follows the internal pudendal artery. The same study illustrated that the pudendal nerve was 76% times medial to the artery and only 9% lateral to the artery, and 15% on both the sides [5]. The pudendal nerve lies in close association with the sciatic nerve between the piriformis and coccygeus muscles just cephalad to the ischial spine. The pudendal nerve has three branches, the inferior rectal, perianal branch innervating the skin around the anus and dorsal nerve of the penis/clitoris. Thus, a pudendal nerve block would be ideal for perianal analgesia [5].

Non radiological techniques have been used to perform pudendal nerve block by palpating the ischial spine as an anatomical landmark [5]. Pudendal nerve blocks have been performed using CT and MRI guidance targeting the nerve as it passes between the sacrospinous and sacrotuberous ligaments [4]. High volumes of LA injected with these modalities can lead to inadvertent sciatic nerve block [6].

However, ultrasound facilitates the nerve blocks in real-time and with low volumes [5]. Ultrasound guided pudendal nerve blocks have been reported to relieve chronic perianal pain [6].

Our case report adds to the existing literature the utility of

ultrasound-guided pudendal nerve block. We injected 5 ml 0.2% ropivacaine and 15 mcg clonidine bilaterally. Block effectiveness was confirmed with sensory delineation and sciatic nerve affection was excluded after testing for ankle movements.

Neuraxial technique was contraindicated in this patient for three reasons 1) Spondylodiscitis 2) Ongoing dual antiplatelet therapy and 3) Low EF with akinetic inferior wall. Neuraxial techniques in patients with compromised heart (low ejection fraction, CCF) would result in precipitous fall in arterial pressure affecting target organs and are contraindicated in patients on low molecular weight heparins and in coagulopathies. Ultrasound-guided relatively intermediate blocks mitigate unstable haemodynamic response and is a safe and efficient technique in patients who don't prefer or are not a candidate for other forms of anaesthesia. Administration of these blocks in patients treated with LMWH is individual decision, though superficial blocks have been described in literature.

### Conclusion

The rarity of this block and its application for perioperative analgesia in high-risk patients makes this an important block in the anaesthesiologist's armamentarium.

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**Declaration of patient consent:** The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his/her consent for his/her images and other clinical information to be reported in the Journal. The patient understands that his/her name and initials will not be published, and due efforts will be made to conceal his/her identity, but anonymity cannot be guaranteed.

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