



Perianal Block for Open Hemorrhoidectomy: A Case Series

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ABSTRACT

Introduction: Hemorrhoidectomy is one of the most common anorectal surgeries performed in a surgical room or ambulatory clinic. The procedure is linked to severe postoperative pain. Both general and regional anesthesia with spinal anesthesia is used in anorectal surgery. However, these predominantly used anesthesia methods leave postoperative side effects of nausea, vomitus, urinary retention, headache, dizziness, back pain, prolonged inferior muscle weakness, and the level of postoperative pain after the anesthesia wears off. **Case presentation:** Three cases of severe hemorrhoids were reported, and they underwent open hemorrhoidectomy with a perianal block. Postoperatively, all cases reported no side effects, minimal level of pain, and faster recovery. Recently, the perianal block has been used to curtail the side effects. **Conclusion:** Perianal block is performed by infiltrating the inferior rectal nerves innervating the anus and sphincter muscle. Sedation is sometimes performed prior to injection of the anesthetic block. This technique is considered safe and effective for hemorrhoidectomy.

Keywords: Hemorrhoidectomy, Perianal Block, Postoperative Pain, Digestive Surgery.

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Introduction

A hemorrhoid is a medical condition affecting 4% of the world population, with 25% of the patients undergoing hemorrhoidectomy.¹ Patient often complains about severe postoperative pain. A previous study reports more than 70% of patients had severe 24 hours postoperative pain where the degree of the pain is twice that of cholecystectomy and appendectomy procedures.^{1,2} In addition, abiding and concerning the level of postoperative pain is associated with a prolonged recovery period. Anus has abundant sensory innervation and is more susceptible to pain. Both general and regional anesthesia with spinal anesthesia is used in anorectal surgery. However, these predominantly used anesthesia methods leave postoperative side effects of nausea, vomitus, urinary retention, headache, dizziness, back pain, inferior muscle weakness, and concerning levels of postoperative pain. Recent studies trend has shifted to perianal block for hemorrhoidectomy since it is considered simple, easy, has a minimal side effects, lower cost, and faster recovery.^{3,4} We report three cases of severe hemorrhoids undergoing hemorrhoidectomy with a perianal block at a national cancer referral hospital. The focus of our case series is to show that this method has minimal postoperative pain intensity and faster recovery. All patients provided consent to the publication of this case series, and all patient identity information was omitted.

Case presentation

In this case series, the patient was premedicated with Midazolam and Fentanyl and sedated with Propofol prior to the perianal block. The perianal block was performed with Ropivacaine 0.375% on 10 cc syringe and a fine 23G needle. Aphinives technique⁵ was used. Local subcutaneous infiltration was performed superficially on the diamond-shaped anus (Figure 1). After 1 minute, four further injections were applied to four quadrants. The injection site was at 2-, 4-, 8-, and 10- o'clock in lithotomy position, 5 mm from the border of the anal opening. Initially, we injected 3 cc of local anesthetic, and 2-3 cc was administered at 4 cm, 3 cm, and 2 cm (needle length) depth from the skin. A total of 12 cc of the local anesthetic agent was administered on superficial infiltration, and 7-8 cc was administered on each injection site. After 3-5 minutes, the operator evaluated if the sphincter had relaxed. If the patient had shown tachycardia or had been awakening, Propofol was titrated, Fentanyl was added, and additional local anesthetic injection was added around the operative field. Conversion to general anesthesia was backed if anything might have gone sideways. After the



procedure, patients have prescribed IV Paracetamol 1 g per 8 hours and Ketorolac IV injection 30 mg three times a day.

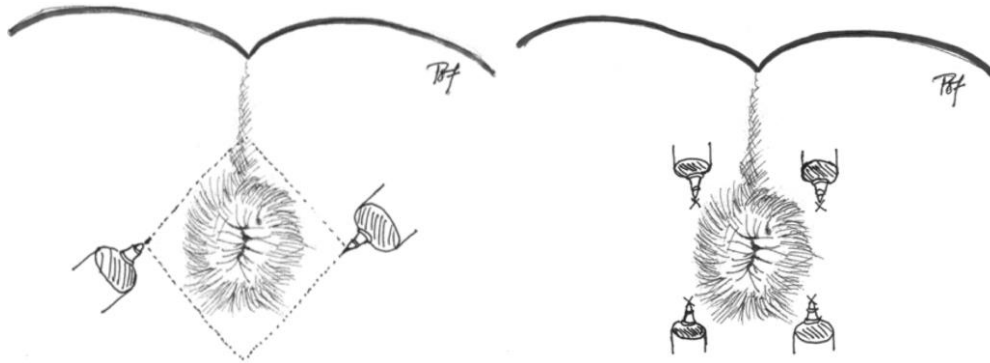


Figure 1. Perianal block for hemorrhoidectomy. Left: the diamond-shaped subcutaneous infiltration. Right: the 2-, 4-, 8-, 10- o'clock injection side for nerve block. Adopted from Aphinives technique⁵

Case 1

The first case is a 25-year-old healthy male with a grade IV hemorrhoid with a history of a palpable mass protruding from the anus for more than two years. The prolapse cannot be reduced for the last three weeks. He felt pain when passing stool. He described the pain as stabbing pain in the anal region with no radiation. Presenting pain was 3-4 on a numerical rating scale (NRS) after we administered 30 mg of IV Ketorolac. Presenting vital signs were normal, and he has unremarkable general status and preoperative laboratory tests (routine hematology panel, bleeding panel, blood glucose, ureum, and creatinine). In the lithotomy position, the hemorrhoid was located at 3-, 7-, and 9- o'clock. He was planned for an open hemorrhoidectomy.

Premedication with Midazolam 2 mg and Fentanyl 100 mcg was administered intravenously (IV). Propofol titration for induction was used for sedation. The patient was in a lithotomy position and breathed spontaneously with the oxygen of 4 liters per minute (lpm) given from the nasal canula. The surgery lasts for 20 minutes with 2 cc bleeding. Intraoperative vitals were stable. The 24-hour postoperative monitoring showed the pain level was NRS 0-2, with no side effects or patient complaints. No additional Opioid was given during the recovery time. After 24 hours, the patient was discharged. Three days later, during a scheduled evaluation visit, the patient mentioned there was pain with NRS 3-4 on day two



postoperative when the patient passed the stool at home. However, not long after that, the pain resolved itself, and he did not seek additional medical attention.

Case 2

The second case is a 33-year-old female with a grade III hemorrhoid. Hemorrhoid has been there for more than a year but was spontaneously reducible. She has been in pain for the last 2 days when the hemorrhoid was not reduced digitally. The pain increased in intensity day by day. There was bleeding from the anus every time she passed the stool. Presenting vital signs were normal, and she has unremarkable general status and preoperative laboratory tests. The hemorrhoid was located at 1-, 3-, 7-, and 9- o'clock. She underwent an open hemorrhoidectomy. The patient was premedicated with Midazolam 2 mg and Fentanyl 75 mcg and sedated with Propofol titration. The surgery lasts for 25 minutes with 1 cc of bleeding. Intraoperative vitals were stable. Similar to the first case, the 24-hour postoperative monitoring showed the pain level was NRS 0-2, with no side effects or patient complaints, and she was discharged after 24 hours. At home, she complained of pain after passing stool with NRS 4-5, but it still resolved with over-the-counter medicine on a day.

Case 3

The third case is a 35-year-old female with internal and external hemorrhoids with a thrombus. She has been in pain NRS 5-6 for three days with irreducible mass prolapsing on her anus. Kalium Diclofenac 50 mg orally was not helping. The pain decreased after she was given 1 g of IV Paracetamol and 100 mg of IV Tramadol in the emergency department. Presenting vital signs were unremarkable with slight hypertension and tachycardia due to pain, and she has unremarkable general status and preoperative laboratory test. The hemorrhoid was located at 3-, 7-, and 9- o'clock with a visible thrombus. The patient was premedicated with Midazolam 2 mg and Fentanyl 100 mcg and sedated with Propofol titration. The surgery lasts for 25 minutes with 1 cc of bleeding. Intraoperative vitals were stable. Similar to the first and second cases, the 24-hour postoperative monitoring showed the pain level was NRS 0-2, with no side effects or patient complaints. After being discharged, she complained of intermittent pain of NRS 2-3, but she was not concerned and sought additional medical attention. 48 hours after the procedure, she complained of severe NRS 5-6 pain during passing stool but it resolved right after she took Paracetamol 600 mg and Kalium Diclofenac 25 mg orally.



Figure 2. Position for nerve block in hemorrhoidectomy. A) Case 1, B) Case 2, C) Case 3

Discussion

Hemorrhoidectomy has a high level of postoperative pain due to the abundant amount of sensory nerve fiber located perianal. General anesthesia and regional spinal anesthesia have been predominantly used since the earliest time. However, numerous side effects have been reported following the well-known technique. Nausea, vomitus, urinary retention, headache, dizziness, back pain, inferior muscle weakness, and a concerning level of postoperative pain has been reported previously. Since local anesthesia is becoming more prevail, one-day-care hemorrhoidectomy increases. Both local and regional anesthesia is available for simple hemorrhoidectomy, field block infiltration, pudendal nerve block, perianal block, and combined nerve block and infiltration. The perianal block is simpler, easier, and evidently safe.^{2,6,7} Perianal nerve block targets the inferior rectal nerve, the branch of the pudendal nerve originating from S2, S3, and S4. The nerve innervates the anal canal, especially the region below the dentata line, the most sensitive part to pain, touch, and temperature. The efferent fibers of the inferior rectal nerve innervate the external sphincter.⁸ Weisi Xia et al., on a systematic review and meta-analysis, showed single local anesthesia is superior to general anesthesia and regional anesthesia for hemorrhoidectomy. There was a significant difference in postoperative pain intensity, additional analgesic, headache, intraoperative hypotension, and patient's length of stay at the hospital.⁹ Park et al. reported that perianal block is suitable for all types of anal surgery and provides a higher level of patient satisfaction. In addition, Rotaglio et al. reported the use of perianal block as a combination of general or spinal anesthesia in rectal surgery resulted in lower NRS pain level, 40% lower rescue analgetic up to 24 hours postoperative.²⁻⁴ Anamcharoen et al learned that perianal block offers a better advantage compared to spinal anesthesia, especially on urinary retention.¹⁰

There are several methods of the perianal block. In our case series, the technique used for hemorrhoidectomy is the Aphinives technique. The disadvantage of the technique is that



multiple injection sites are required. In our case series, the anesthesiologist made at least six injections to provide adequate infiltration to block the nerves. Sedation was administered priorly to avoid pain during injection and relieves the patient's anxiety.² Le et al. found that perianal block combined with sedation is the most effective technique for ambulatory anorectal surgery. Ropivacaine was preferred due to its longer effect duration (240 minutes) and was reported to significantly lower NRS pain intensity postoperatively.¹¹

In our case series, the cases were performed by two different operators performing the same procedure, the open hemorrhoidectomy. No difference was observed in terms of patient outcome and complication. All of the patients were transferred to the surgical ward less than an hour postoperative with Aldrete score higher than 8 and no additional complaints. Following discharge, our third patient experienced moderate-severe pain intensity NRS 5-6 after passing stool that resolved after taking over-the-counter analgetic. The patient was previously admitted with a visible thrombus on the external hemorrhoid. Given the nature of the patient's presenting condition, this may be held accountable for the high-intensity pain she felt.

Conclusion

From our case series, we suggest that perianal block is an effective technique for ambulatory open hemorrhoidectomy.

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