DOI: https://doi.org/10.53350/pjmhs22168706

ORIGINAL ARTICLE

Surgery for Simple Anal Fistula under Local Anesthesia

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ABSTRACT

Background: Infections of the anal glands, which drain into the anal crypts, account for more than 95% of all cases of anorectal abscess. Although fistula-in-ano is usually harmless, it can nonetheless cause severe pain and significantly impact patients' day-to-day lives. Even though most anorectal procedures are performed when the patient is under general or regional anesthesia, there is mounting proof that these procedures can be done safely and effectively in an outpatient setting using only local anesthesia. All procedures in the current investigation were performed with local anesthesia, specifically, 2% lidocaine and 0.5 % bupivacaine.

Place and Duration of study: Departments of General Surgery, HMC Peshawar and Nishtar Hospital, Multan for the duration of six months from June 2021 to November 2021.

Method: Including the time needed to inject the anesthetic, the typical surgical procedure lasted around 26 minutes. No patient reported more than a 7 on a visual analogue scale for pain on the day of surgery, or the first postoperative day. In most cases, patients spend around two days in the hospital.

Results: Including the time needed to inject the anesthetic, the typical surgical procedure lasted around 26 minutes. No patient reported more than a 7 on a visual analogue scale for pain on the day of surgery, the day of surgery, or the first postoperative day. In most cases, patients spend around two days in the hospital.

Conclusion: With early ambulation, good tolerability, and fewer anaesthetic problems, local fistula in- ano repair anesthesia is a safe and effective option. In-Ano Fistula, VAS, and Local Anesthetics are some of the terms that will be discussed.

INTRODUCTION

Fistulas occur when two epithelial surfaces fail to join properly. Both the anal canal or rectum and the skin around the anus can develop an abnormal opening known as a fistula. An anorectal abscess that either burst on its own or is opened improperly is usually to blame for this condition [1]. The anal glands, which are in constant contact with the anal crypts, are the source of infection in more than 95% of all cases of an anorectal abscess (cryptoglandular hypothesis). During the acute stage of the illness, anorectal abscesses form, and during the chronic stage, anal fistulas are the hallmark symptom [2]. The importance of anal (intramuscular) glands—also known as intramuscular, anal, perianal, and crypt glands—is recognized by the majority of anorectal illnesses. Usually, between 6 and 10, they provide access to the anal crypts, predominantly found in the submucosa but extending into the internal sphincter. Cryptitis, anorectal abscesses, and fistulae all stem from infections [3].

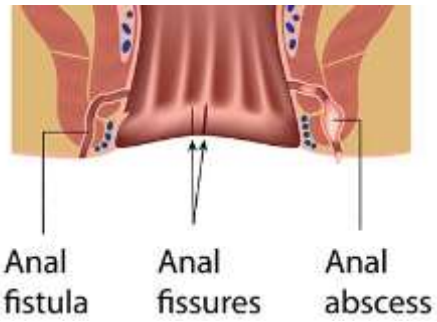

Fig.1: Anal fistula surgery

glands in this area. The internal anal sphincter is innervated by both sympathetic (L1-L3) and parasympathetic (S2-S4) nerve fibers, and both serve to attenuate sphincter contraction. These muscles and the external anal sphincter receive nerve fibers from the inferior rectal branch of the internal pudendal nerve. The anal canal receives sensory innervation from a lower branch of the pudendal nerve [4]. Ano's fistulae can be divided into two broad classes: Minor nasopharyngeal fistula: If a hole is drilled internally into the anal canal below the anorectal ring, the patient is less likely to experience long-term incontinence. Multiple operations are usually necessary for patients with a high-level fistula-in-ano, an internal opening that opens into the anal canal above the anorectal ring. Researchers Park and colleagues classified fistulas as follows [5]:

- The most common variety is intersphincteric, which involves an opening in the internal sphincter that connects to the skin.


Fig.2: Sphincterotomy for Anal Fistula

- trans sphincteric - traversing the internal and exterior sphincters before reaching the epidermis.
- The ischiorectal fossa is the endpoint of a pathway that begins in the intersphincteric plane, travels through a supra levator region, and then traces a path between the puborectalis and levator ani muscles [3].
- An extra sphincteric opening is located supra levator and has a tract that travels through the complete sphincter mechanism before emerging from the skin [4].

Clinical presentation: An acute abscess is just one of the many ways a fistula can manifest itself.

- ❖ Pain
- ❖ Swelling
- ❖ Diarrhea
- ❖ Bleeding
- ❖ Skin excoriation
- ❖ perianal discharge

It can be diagnosed only based on the results of a physical examination without requiring specialized laboratory tests. The examiner needs to look at the perineum as a whole. Possible spontaneous discharge may be visible through the external opening. Fibrous tracts or cords under the skin might be seen during the digital rectal examination. Inflammation that extends laterally or posteriorly indicates a serious postanal or ischiorectal problem [6].

In most cases, an angiogram is needed to pinpoint the exact location of the entrance from the inside. Radiological tests, such as fistulography, are not routinely used in fistula examinations. Hence it is unclear why they are listed here. However, they can be useful if finding the main entrance is challenging [7].

Anesthesia: Fistula-in can be fixed with surgery performed under general, spinal, or local anesthesia. In our usual practice, fistulas are performed under spinal anesthesia with sensorcaine strong; in this study, however, lidocaine 2% and bupivacaine 0.5 % were used for local anesthesia instead [8]. Local anesthetics achieve their anesthetic effects by binding to and momentarily blocking the activation of sodium channels. Lidocaine is one of the most widely used local anesthetics these days (also known as lignocaine and xylocaine). At concentrations between 0.5 and 2 percent, it causes severe motor and sensory nerve blockage with a short onset time and a moderate lingering effect. Therefore, it can be utilized for infiltration, block, and surface anesthesia [9]. Bupivacaine is a potent anesthetic with a gradual start but a long duration of action, making it ideal for local infiltration, peripheral nerve block, sympathetic nerve block, epidural, and caudal blocks (concentrations of 0.1-0.75 percent in commercial preparations). When compared to lignocaine, which has a rapid onset of action (up to 120 minutes) and a longer duration (up to 7mg/kg body wt), bupivacaine's usual dose is between 2.5 and 3mg/kg body wt, with a slower start of the action and a longer duration of anesthesia (up to 4 hours) [10]. To improve patient safety and enable the use of lower doses of local anaesthetic, it has been proposed that epinephrine be added to local anaesthetic solutions. Due to the vasodilatory properties of local anesthetics, they are taken up into the systemic circulation from the surgical site via the dilated arterioles in the periphery [11]. Because epinephrine causes vasoconstriction, the local anesthetic takes longer to be absorbed in the injection site, allowing for a higher, safer dose [12].

Aims and Objectives:

1. Evaluate the safety and efficacy of doing a fistulectomy using only local anesthesia.
2. To evaluate how well the fistula was removed under local anesthesia.
3. This study aims to assess the incidence of complications, recurrence, and mortality following a fistulectomy performed under local anesthesia [13].
4. This study aims to evaluate the frequency with which fistulectomy patients require a change from local to general or spinal anesthesia [14].

MATERIAL AND METHODS

All procedures in the current investigation were performed with local anesthesia, specifically, 2% lidocaine and 0.5 % bupivacaine. All instances of low fistula in-ano, regardless of age or sex, were taken after thorough local per-rectal and proctological tests in addition to the standard medical examination and the systemic evaluation. Patients with inflammatory bowel illness, high fistula-in-ano, cancer, STDs, unsuccessful surgery, genital warts, severe heart disease, or pregnancy were excluded from the trial.

Operative technique: Standard operating protocols included local infiltration with a solution containing 30 ml of 2% lignocaine, 20 ml of 0.5 % bupivacaine, and 10 ml of 7.5 % sodium bicarbonate, all diluted to a total volume of 150 ml with 0.9 % normal saline, after receiving written consent from each patient. Minutes before surgery, this cure was prepared. The initial two injections were administered bilaterally at the 3 and 9 o'clock positions, with the solution being injected superficially in a diamond shape and placed 5 mm from the perianal skin's boundary. A block of the anal canal was performed with a local anesthetic. After one minute, four further injections were given deeply in the four quadrants, 5mm from the border of the anal opening, establishing what Nystrom .[15] described as a "peri sphincteric deposition" of the anesthetic agent that reached up to the levator ani. A 25G spinal needle injects roughly 25ml of fluid on both sides, effectively cutting off the pudendal nerve. This local anesthetic solution not only kept patients' pain-free for 60-90 minutes but also helped keep intraoperative bleeding under control. After another 5-7 minutes of waiting, the surgery began. We palpated the fistulous track with our thumbs and fingers to understand the type of fistula and the direction it was leading inside the body.

The anorectal ring and the four quadrants of the anorectum were then examined using proctoscopy to pinpoint the exact location of the internal opening. We injected methylene blue and hydrogen peroxide through the visible aperture to mark the path. The fistula's exterior hole was then used to carefully introduce a flexible probe to measure and chart the fistula's track. The probe's tip was adjusted with a finger inserted into the anal canal to bring it out at the anus. The entire fistulous tract was removed while the probe was still in place using an elliptical incision around the exterior entrance [16]. The same treatment was given to any subtopics from the main text. The wound floor was smoothed out, and any excess skin was removed. After removing any potentially harmful fibrous tissues or scarring, Complete hemostasis was achieved by packing the wound with lignocaine and betadine-soaked gauze. Wraps were applied as a T. Postoperative pain, bleeding, and other complications were tracked daily; patients were discharged when they could move freely without restriction, and no new problems had emerged. Over the next two months, we contacted each participant several times.

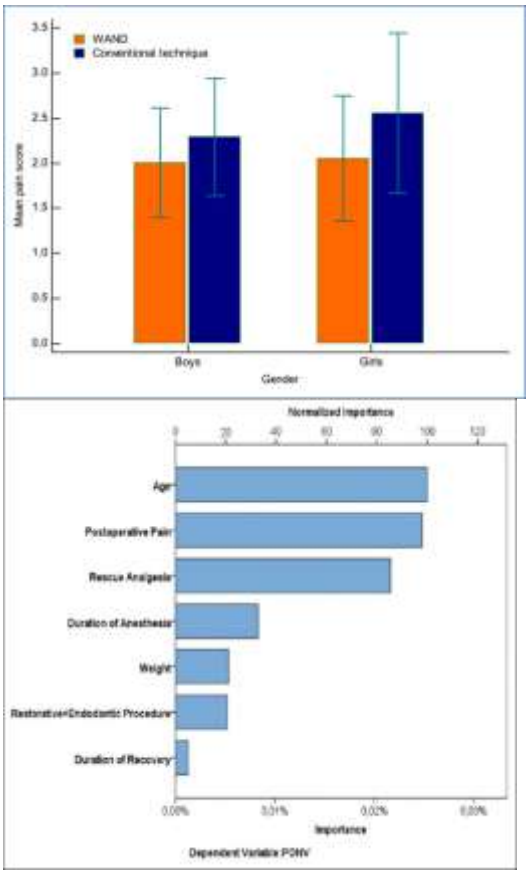

Fig.3: (a) showing the comparison of pain VAS score (b) showing postoperative nausea and vomiting

RESULTS AND ANALYSIS

Time in surgery (in minutes), pain experienced during surgery measured on a visual analogue scale (VAS), pain experienced in the first 24 hours after surgery, the need for injectable pain medication, the severity of postoperative bleeding, the incidence of postoperative nausea and vomiting, and the length of time spent in the hospital were all taken into account when assessing the outcomes (in days). Aftercare observations included wound closure, secondary bleeding, bowel incontinence, anastomotic stenosis, and recurrence. In the current study, fifteen patients (30%) and thirty patients (60%) had external openings posterior to the transverse line. Because of this, 5 patients had slots open simultaneously (up to 3 openings, mixed). Ten out of fifteen occurrences of posterior fistulas support Goodsall's law (66.67 percent). Sixty percent of individuals with anterior fistula were correctly diagnosed using this criterion (18 out of 30 patients). Ten of our patients had no obvious external opening. Fistulograms were performed on all of these people. The individuals who had mild anal fistula were included in the study. The average duration of an operation was 26.44 minutes, ranging from 15 to 45 minutes to account for the infiltration of a local solution. The anal canal was dilated without discomfort, confirming that the sphincter had been sufficiently relaxed. Short-term analgesia was achieved, and in most patients, further anesthesia for maintenance was unnecessary during the brief surgical procedure. During the surgery, the average VAS score (Graph 1) was 3.96 on a scale from 0 to 8; the next day, 12 hours after surgery, it was 4.28 on a scale from 0 to 7; and the day after surgery, day 1, the average VAS score was 1.68 on a scale from 0 to 4. There was a significant decrease in the average VAS pain score during surgery compared to the VAS pain score on the day of surgery, indicating a reduced need for postoperative analgesia. There were no reports of adverse effects from the local anesthetic used in the trial, and no patients required a spinal or general anesthesia change. However, patients who reported pain out of the blue received extra doses of the solution in addition to the injectable analgesia. Pain medication in the form of nonsteroidal anti-inflammatory drugs (NSAIDS) was injected into all patients at 12-hour intervals beginning on the day after surgery. On the second day, 8 patients needed analgesia, but on the third day, just 2. On average, injectable analgesia was needed for 1.2 days. Patients' perceptions of their surgical experience are significantly diminished by the persistently high rate of postoperative nausea and vomiting (PONV). Graph 2 shows that 12 PONVs occur most commonly with general anesthesia, regional anesthesia, and local anesthesia. The only individuals in our study group to experience PONV did so on the day of surgery; those patients made up just 12% of the total. An antiemetic was given once or twice, and it was sufficient to control all instances. Patients who did not experience PONV were able to begin a postoperative oral liquid feed as early as 6 hours after surgery. Nearly all patients had their anal packs removed the day after surgery, and dressing and wounds were examined the next day to determine if any bleeding had occurred. The dressing was taken off for the 47 patients with light to moderate soakage, and they were instructed to take a sitz bath in Luke's warm water twice daily. In three cases, the anal packing was not removed on the first postoperative day (6 percent), which was because of considerable soakage of the dressing owing to bleeding. No patient experienced life-threatening bleeding that necessitated emergency surgery. Six patients (12%) were diagnosed with retention of urine13 and required drainage catheterization with a K-90 or foley's catheter. Approximately 12% of patients experienced postoperative fever (99-101.0 degrees Fahrenheit) without accompanying rigours or chills. The fever was managed with 650 milligrams (mg) of paracetamol once or twice daily. Constipation occurred in 4 patients after surgery and was treated with a gentle laxative. Two days is the typical time patients spend in the hospital following surgery, as seen in Graph 3. 24 patients stayed for only one day, 16 for two, five for three, one for four, and three for more than five. One patient was dismissed the same day. Postoperative problems such as fever, constipation, or significant bleeding were associated with a lengthier hospital stay. In our study, wound healing took about 39 days, on average. When the epithelium had completely formed, and the wound had dried, it was deemed entirely healed. Patients in our study were released from the hospital once they demonstrated enough motion, experienced no postoperative complications, and showed no signs of bleeding. Every patient was instructed to take a sitz bath in Luke warm water containing povidone-iodine solution twice daily, followed by the application of metronidazole-providing ointment to the affected area. Our research found that the shortest period a wound needed to heal was 22 days, and the longest was 65 days. In our study of 50 instances, 74% of the patients were better in 4-8 weeks, and 20% were better in less than 4 weeks. The major bleeding arteries were successfully ligated during the operation with a catgut suture, resulting in proper hemostasis. Minor stenosis of the anal entrance was documented in 2 cases and was treated with antibiotics and a sitz bath to enlarge the anal canal. Major incontinence was present in all patients because of the low ano fistula present and the minimal damage to the anorectal ring. No cases of major incontinence (loss of formed feces or liquid faeces leaking for more than a week following surgery) were reported. Minor incontinence lasting a few days was reported by 4 patients and was treated conservatively. After 3 months, recurrence was observed in 2 cases.

Summary: As confirmed by clinical or radiologic means, fifty patients with low fistula were prospectively analyzed. In light of this research, we find the following. More men than women have a fistula, which most commonly appears between 30 and 50. The most common symptom recorded by clinicians (96%), followed by discomfort and edema, was perineal discharge, and the average disease duration was roughly 6 months. - It is possible to establish the location and size of a fistula by combining a digital rectal exam with proctoscopy in the vast majority of cases. Other than detecting an internal opening, the fistulogram adds no information. - Around 60% of anterior and posterior exterior apertures were within the accuracy range for Goodsall's rule. - A total of about 26 minutes was spent on the procedure, including injecting the anesthetic. There was no more than a 7 on the visual analogue scale for pain during the operation, the working day, or postoperative day 1, with most patients scoring between 3 and 4. All patients were treated to completion, with no instances being abandoned, and the entire tract was removed with successful hemostasis achieved, demonstrating the procedure's viability. No cases experienced lignocaine/bupivacaine toxicity or other systemic anaesthetic problems due to a safe, effective dose of local anaesthetic and a meticulous infiltration technique. No patient required postoperative analgesia for more than 4 days. Most cases involved the early introduction of oral liquid feed and walking. Retention, bleeding, fever, and constipation were extremely rare early postoperative problems. Most patients could walk around the hospital within 24 hours of admission, and their stays lasted just about two days on average. The usual duration for a wound to heal via granulation is between four and eight weeks when given adequate antibiotic treatment, a daily sitz bath, and appropriate local care (74 percent cases). The delayed postoperative consequences include mild stenosis (4%), slight incontinence (8%), and recurrence (4%).

CONCLUSION

In conclusion, modest and uncomplicated fistula excision under local anesthetic is a straightforward procedure that is well-liked by patients and can be learned quickly and easily. Reducing the length of time spent in the hospital, the time spent recovering, the patient's financial outlay, and the time off work are all positive outcomes. Therefore, the most effective and ideal therapeutic choice is local anesthetic excision of a low and uncomplicated fistula-in-ano.

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