

Surgical treatment of anal fissures under local anesthesia

Ahmed E. Al-Raymoony, MD, JB.

ABSTRACT

Objective: To evaluate lateral sphincterotomy under a mixture of local anesthesia versus general anesthesia in the treatment of anal fissures.

Methods: A randomized clinical trial of 62 consecutive patients requiring lateral sphincterotomy was carried out at Princess Haya Al-Hussein Hospital in Jordan. One group underwent lateral sphincterotomy under general anesthesia, while the 2nd group had topical anesthetic cream (xylocaine 2%) applied followed by local anesthesia.

Results: There were no differences between the 2

groups in terms of operating time, postoperative pain, nausea or vomiting, pain-free interval after operation, analgesia requirements or patients satisfaction with the method of anesthesia.

Conclusion: Topical anesthetics and local anesthesia can be used effectively for lateral sphincterotomy and provides an alternative to general anesthesia.

Keywords: Anal fissures, surgical treatment, local anesthesia.

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Although lateral sphincterotomy can be performed under local anesthesia, this technique is unpopular as severe pain may be experienced during injection through the sensitive perianal skin. While general and regional anesthesia provides reliable anesthesia, they are often associated with nausea, vomiting, urinary retention and motor blockade of the lower limb, causing delay in mobilization, so same-day discharge from hospital may not be possible. Topical local anesthetic (xylocaine cream 2%) has been used extensively, especially for Venipuncture and intravenous cannulation.¹ Other applications include simple dermatological surgery,^{2,3} minor otological surgery,⁴ minor oral surgery,⁵ pediatric lumbar puncture, Gynecological, Orthopedic and Urological procedures.⁶ It has proven to be effective and well tolerated, providing satisfactory pain relief when used in these procedures. Use of xylocaine cream for perianal surgery has not been investigated previously, this

may be due to difficulty in providing a perianal occlusive dressing, in the absence of which the cream is ineffective. We have used a paraffin-impregnated gauze dressing to keep the cream in contact with the perineum. Local anesthetic can then be injected painlessly for patients undergoing lateral sphincterotomy. A comparison was made between 2 groups of patients undergoing lateral sphincterotomy, one in which topical and local anesthetic was used, and in the other the procedure was performed under general anesthesia.

Methods. Sixty-two patients with symptomatic anal fissure undergoing lateral sphincterotomy were randomized to the local anesthetic (LA group) or the general anesthetic (GA group) by the use of sealed envelopes. Only those patients classified as American Society of Anesthesiologists grade I or II were included in the study. All patients fasted for 12

From the Department of General Surgery, Princess Haya Al-Hussein Hospital, Royal Jordanian Medical Services, Jordan

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Address correspondence and reprint request to: Dr. A. Al-Raymoony, PO Box 191, Jerash, Jordan. Tel. +962 (2) 6350828. Fax. +962 (2) 6351405. E-mail: raymoony@hotmail.com

hours before the operation with no premedication. In the LA group xylocaine cream was applied in the ward at least 20 minutes before the time of planned surgery. This was carried with the patient in the left lateral position, 5 grams of cream were applied to the perianal region followed by an occlusive dressing of gauze impregnated with paraffin. Patients were then asked to rest lying on their side. At the time of surgery, they were placed in the lithotomy position. The surgeon injected up to 15ml of a 1% Bupivacaine solution with Adrenaline into the intersphincteric planes in the perianal region. If at any time the patient was intolerant to pain, the operation was continued under general anesthesia. Alternately, if sedation was requested, intravenous Midazolam was given. In the GA group general anesthesia was induced with Propofol and Fentanyl, laryngeal masks were inserted in all cases. General anesthesia was maintained with Nitrous Oxide, Oxygen and Halothane. Both groups of patients had perioperative monitoring with electrocardiograph, pulse oximetry and non-invasive blood pressure monitoring. The age, sex and weight of all patients was recorded. In the LA group the duration of application of the xylocaine cream was recorded, the total time on the operating table and the actual time for the operation were noted. Patients were also asked to grade the degree of pain experienced during injection of local anesthetic, introduction of the proctoscope and the surgery itself. Pain was graded as none, mild, moderate, severe or very severe. The amount of intravenous Midazolam was recorded where appropriate. If conversion to general anesthesia was required, the reasons were clearly documented. In the GA group, the total time on the operating table, the time under general anesthetic and the time for surgery were recorded. Any problems encountered by the surgeon or anesthetist were noted, after operation all patients were sent to the recovery area of the operating theatre. Oxygen was not administered, oxygen saturation was measured using a pulse oximeter and blood pressure was monitored using a non-invasive blood pressure cuff. Patients were asked if they experienced any pain, nausea or vomiting. They were again questioned regarding symptoms of pain, nausea or vomiting 30 minutes later. After returning to the ward, patients were asked to inform the nurses as soon as they felt pain at the operation site. The time elapsed from surgery to the first feeling of pain was recorded. The types of analgesic required were also documented. Patients were discharged on the evening of surgery or the next morning, according to their preference. Just before hospital discharge, patients were asked if they were satisfied with the anesthetic, and if they would choose the same method of anesthesia again for perianal surgery. Patients were subsequently seen 4 weeks after surgery and any complications were noted.

Table 1 - Patient's pain levels during local anesthetic administration, proctoscopy and surgery.

	None	Mild	Moderate	Severe	Very severe
Pain during local anesthetic infiltration	17	25	12	5	3
Pain during proctoscopy	20	23	16	3	-
Pain during surgery	19	25	13	5	-

Results. Thirty-two patients (14 men and 18 women) were randomly assigned to the LA group, the mean age was 38 (ranged 23-64) years, and the mean weight was 57 (range 45-70) Kg. Thirty patients (9 men and 21 women) were randomized to the GA group, the mean age in this group was 38 (range 20-74) years and the mean weight was 56 (range 41-77) Kg, there was no difference in age, sex and weight between the 2 groups. The mean time on the operating table was 15 minutes in the LA group, and 20 minutes in the GA group, and actual operating time was 7 minutes in both groups. The mean duration of application of topical anesthesia in the LA group was 30 (21-46) minutes. The patients pain levels during local anesthetic infiltration, proctoscopy and cutting by diathermy are recorded in Table 1. No patient required conversion to general anesthesia. Nineteen patients were given Midazolam for intra-operative sedation, 13 patients did not require intravenous sedation. In the GA group, the mean duration of anesthesia from induction to reversal was 15 minutes. There was no difference in the oxygen saturation or pulse rates measured immediately after operation. In the immediate postoperative period, no patient reported any nausea or vomiting in either groups. Five patients in the LA group, and 3 in the GA group reported pain at the operation site. One hour after surgery 4 patients in the LA group and 10 patients in the GA group complained of pain. No patient complained of nausea or vomiting. There was no significant difference in symptoms of pain, nausea and vomiting between the 2 groups, the mean time to initial experience of pain was 6.5 hours in the LA and 4.5 hours in the GA group. Postoperative analgesic requirements were similar in both groups. At 6 weeks follow-up, no post operative complication was reported in either group.

Discussion. Lateral sphincterotomy is most frequently performed under general anesthesia, as local infiltration of the perianal region is painful and it is understandably unpopular among surgeons and patients. With either regional or general anesthesia, patients are slower to mobilize, which further

reduces the prospect of lateral sphincterotomy being carried out as a day-case procedure. If local anesthetic could be injected less painfully, then patients may be persuaded to undergo lateral sphincterotomy as a day case under local anesthesia. This would not only reduce hospitalization costs for patients but also makes beds available for others undergoing major surgical procedures. By using topical anesthesia before infiltration of an anesthetic, intraoperative pain is minimized and this may help local anesthesia gain wider acceptance among patients. This study shows that the application of topical and local anesthetic does not take longer than general anesthesia, and symptoms such as pain, nausea and vomiting are not increased. The pain-free interval was also similar, and both groups of patients were similarly satisfied with their respective forms of anesthesia. The patients' oxygen saturation and pulse rate after surgeries were similar in both groups. However patients who had general anesthesia had significantly lower mean arterial pressure than those randomized to local anesthesia, although none were hypotensive, this may be due to the effects of drugs used for general anesthesia. Therefore, in patients with medical conditions who might not tolerate hemodynamic disturbance, use of local anesthesia might be preferable.

It is concluded that the use of topical and local anesthetic infiltration is a well tolerated and effective form of anesthesia when used for lateral sphincterotomy as a treatment of anal fissure. This technique has the potential to reduce hospitalization stay and cost.

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