

**LATERAL SPHINCTEROTOMY FOR ANAL FISSURE UNDER LOCAL ANESTHESIA: IS IT FEASIBLE?**K. S. Shahi<sup>1</sup>, Geeta Bhandari<sup>2</sup>, Bhuvan<sup>3</sup>, Prashant<sup>4</sup>, Sanjeev<sup>5</sup>, Rakesh<sup>6</sup>, Malvika<sup>7</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: OBJECTIVE:** To compare the effectiveness of mixture of local anesthesia versus spinal anesthesia in lateral sphincterotomy for the treatment of anal fissures. **METHODS:** A prospective study of 54 patients requiring lateral sphincterotomy for anal fissures. One group comprising 27 patients underwent lateral sphincterotomy under spinal anesthesia while the other group had topical lignocaine (2%) jelly applied followed by local infiltration of lignocaine (2%). **RESULTS:** There were no significant differences between the 2 groups in terms of operating time, per operative pain, post-operative pain, nausea or vomiting, post-operative requirement of analgesia and patient's acceptability/ satisfaction with method of anesthesia. **CONCLUSION:** A mixture of topical and local anesthesia can be used effectively for lateral sphincterotomy for treatment of anal fissure and is good alternative to spinal anesthesia.

**KEYWORDS:** local anesthesia, spinal anesthesia, lateral sphincterotomy, anal fissure, pain.

**INTRODUCTION:** Patients with fissure-in-ano and hemorrhoids have high anal pressures due to over activity of the internal anal sphincter.<sup>1,2</sup> It would therefore seem logical that reduction in anal pressure may lead to relief of symptoms. This may be achieved either by manual dilatation of the anus (MDA)<sup>3</sup> or lateral subcutaneous sphincterotomy (LSS).<sup>4</sup> Sphincterotomy is a more precise technique than dilatation and it has also been suggested that sphincterotomy can be performed satisfactorily under local anaesthetic.<sup>5</sup>

Lateral sphincterotomy performed under local anesthesia is not popular as severe pain may be experienced through the sensitive perianal skin. While general and regional anesthesia provides good anesthesia but 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. Also general and regional anesthesia is not safe in elderly patients with significant comorbidities and can be operated satisfactorily under local anesthesia.

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

**METHODS:** A prospective study was carried out comprising 54 patients requiring lateral sphincterotomy for anal fissures. The study was done during the period of July 2012 to September 2013. Fifty-four patients with symptomatic anal fissure undergoing lateral sphincterotomy were randomized to the local anesthetic (LA group) or the spinal anesthetic (SA group) by the use of random numbers. The patients classified as American Society of Anesthesiologists grade (ASA) I or II were included in the study.

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The patient with history of any allergic hypersensitivity and patient with ASA >III were excluded from the study.<sup>6</sup> All patients were kept nil per orally for 12 hours before the operation with premedication with anxiolytics and H<sub>2</sub> blockers. In the LA group, lignocaine jelly was applied over perianal skin at least 30 minutes before the anticipated time of surgery. This was carried with the patient in the left lateral position; 4-5 grams of jelly were applied to the perianal region and rest lying on their side. The surgery was performed in the lithotomy position. The surgeon injected 20 ml of a 2% lignocaine with adrenaline into the intersphincteric planes in the perianal region. Intravenous midazolam was given for sedation to patients who requested for sedation or experienced light pain.

In the SA group, spinal anesthesia was given by either 23G to 25G spinal needle. 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 were recorded. In the LA group, the duration of application of the lignocaine jelly was recorded; the total time on the operating table and the actual time for the surgery 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 given was recorded where appropriate. In the SA group, the total time on the operating table, the time under spinal anesthesia and the time for surgery were recorded. Patients were asked if they experienced any pain, nausea or vomiting. After returning to the post-operative ward, patients were asked to report as soon as they felt pain at the surgery site. The time elapsed from surgery to the first feeling of pain was recorded. Patients were seen 1 week and 4 weeks after surgery and evaluated for any post-operative complications.

**RESULTS:** Twenty seven patients (12 men and 15 women) were randomly assigned to the LA group, the mean age was 36 (ranged 22-65) years, and the mean weight was 55 (range 42-71) Kg. Twenty seven patients (13 men and 14 women) were randomly assigned to the SA group, the mean age in this group was 38 (range 19-76) years and the mean weight was 56 (range 40-78) Kg, there was no significant difference in age, sex and weight between the 2 groups.

The mean time on the operating table was 20 minutes in the LA group, and 25 minutes in the SA group, and actual operating time was 9 minutes in both groups. The mean duration of application of topical anesthesia in the LA group was 30 (20-43) minutes. The patient's pain levels during local anesthetic infiltration, proctoscopy and cutting by diathermy are recorded (Table 1). Seven patients were given midazolam for intra-operative sedation.

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. Three patients in the LA group and none in the SA group reported pain at the operation site. Patients who had spinal anesthesia had significantly lower mean arterial pressure than those randomized to local anesthesia. One hour after surgery 4 patients in the LA group and none patients in the SA group complained of pain.

None of the patient complained of nausea or vomiting. None of the patients in LA group and 8 patients complained of urinary retention for which Foley's catheterization was done. 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 7 hours in the GA group. Postoperative

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analgesic requirements were similar in both groups. At 1 and 4 weeks follow-up, no post-operative complication was reported in either group.

	none	mild	moderate	Severe	Very severe
Pain during local anesthetic Infiltration	20	5	2	0	0
Pain during proctoscopy	22	5	0	0	0
Pain during surgery	22	2	3	0	0
Pain after 1 hour of surgery	16	7	2	2	0

**Table 1: Patients pain level at various time**

	Local anaesthesia	Spinal anaesthesia
Mean time of application of anaesthesia	30 min	6 min
Mean operating time	9 min	9 min
Per operative pain	3	0
Mean time of initial experience of pain	6.5 hours	7 hours
Nausea, vomiting	None	None
Urinary retention	0	8
Post-operative requirement of analgesia	same	
Patients acceptability/satisfaction	Good	Good
Mean time of discharge	18 hours	48 hours

**Table 2: Comparison of various parameters in local and spinal anaesthesia**

**DISCUSSION:** From approximately 24 years ago, some authorities believed that the aim of any operation is a successful cure with minimal discomfort and disability to the patient.<sup>4</sup> It is generally accepted that today the majority of minor anorectal diseases such as chronic anal fissure are performed on an ambulatory basis. Requirements for ambulatory anesthesia are rapid onset and lack of intraoperative and postoperative side effects.<sup>7</sup> Lateral sphincterotomy is most frequently performed under general anesthesia or regional anesthesia. Lateral sphincterotomy is not popular among surgeons and patients as local infiltration of the perianal region is painful.

With either regional or general anesthesia, patients are slower to mobilize, so it difficult to perform lateral sphincterotomy as a day care procedure. Lateral sphincterotomy can be done as a day care procedure if local anesthetic could be injected less painfully in perianal region. By using topical 2% lignocaine, infiltration of local anesthetic was less painful, intraoperative pain is minimized and this may help local anesthesia gain wider acceptance among surgeons and patients. Lateral sphincterotomy performed in local anesthesia would reduce hospital stay for patients, less cost, early mobilization.

Concerning the importance of different style of surgical treatment of chronic anal fissure, nineteen publications fulfilled the criteria of the study encompassing 3083 patients up to 2002<sup>8</sup>. Some authorities believe that performing anorectal surgery under spinal anesthesia requires a trained anesthesiologist and has numerous known complications. On the other hand, local anesthesia

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can be safely carried out by the surgeon, and has virtually no complication.<sup>9</sup> Also, Bupivacaine injection in anorectal surgery may have a role in making patients more comfortable and shorten hospital stay.<sup>10</sup> All in all, pain is one of the postoperative complications that requires longer hospital stay in the post anesthetic care unit.<sup>11</sup>

This study shows that the application of topical and local anesthetic does not take longer than spinal anesthesia. There were no significant differences between the 2 groups in terms of operating time, per operative pain, post-operative pain, nausea or vomiting, post-operative requirement of analgesia and patient's acceptability/ satisfaction with method of anesthesia.

Patients who had spinal anesthesia had significantly lower mean arterial pressure, although none were hypotensive, this may be due to the effects of drugs used for spinal anesthesia. Therefore, in patients with medical conditions who might not tolerate hemodynamic disturbance, use of local anesthesia might be preferable.<sup>12</sup>

**CONCLUSIONS:** 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 perform lateral sphincterotomy as day care procedure and reduce hospitalization stay and cost. A mixture of topical and local anesthesia can be used effectively for lateral sphincterotomy for treatment of anal fissure and is good alternative to spinal anesthesia.

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### **AUTHORS:**

1. K. S. Shahi
2. Geeta Bhandari
3. Bhuvan
4. Prashant
5. Sanjeev
6. Rakesh
7. Malvika

### **PARTICULARS OF CONTRIBUTORS:**

1. Professor, Department of Surgery, GMC, Haldwani.
2. Professor, Department of Anaesthesiology, GMC, Haldwani.
3. Assistant Professor, Department of Surgery, GMC, Haldwani.
4. Senior Resident, Department of Surgery, GMC, Haldwani.

5. Junior Resident, Department of Surgery, GMC, Haldwani.
6. Junior Resident, Department of Surgery, GMC, Haldwani.
7. Junior Resident, Department of Surgery, GMC, Haldwani.

### **NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:**

Dr. K. S. Shahi,  
Department of Surgery,  
GMC, Haldwani.  
E-mail: kedar\_shahi@rediffmail.com

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