

Comparative Study of Haemorrhoidectomy under Local Anesthesia versus Spinal Anesthesia

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Abstract

Introduction: Haemorrhoids are the most common of all anorectal diseases. They are classified as external or internal depending on their position above or below the dentate line. The precipitating cause can be straining at defecation due to constipation, low residue diet, sphincter damage, pregnancy, portal hypertension, senile weakness of muscle supporting the veins, prostatism, sitting or standing for long time, hereditary predisposition, obesity, lifting heavy weight for long period, repeated diarrhea and dysentery^[1,2,3].

The exact pathophysiology of haemorrhoids is not known but has been attributed to high resting anal pressure, intrinsic weakness of blood vessel wall, excessive arterial blood flow, secondary obstruction to outflow and increased intra-abdominal pressure^[4,5]. Many treatment modalities are available like dietary management, office procedures, day surgery procedures and surgical procedures which need hospitalization. Dietary treatment is the best for prevention and also as part of treatment of haemorrhoids. It includes high fibre diet, plenty of fluids and bulk laxatives^[2].

Ano-rectal surgeries performed under conventional anesthesia (GA/SA) are fraught with numerous side effects, such as, drowsiness, headache, nausea, vomiting,

sore throat, backache, postoperative pain and urinary retention. In addition to the need for anesthetists' expertise, GA/SA impose restrictions on pre/post procedural oral intake & movement, necessitate close inpatient post-operative monitoring and contribute towards additional operation room time consumption, making them rather patient and surgeon unfriendly^[6-8].

In the modern surgical practice, economic and social pressures are compelling surgeons to modify their practice and increasing number of procedures are being carried out on outpatient basis. There has been a strong trend toward day care and office procedures for treatment of hemorrhoids also keeping in view cost effectiveness, better patient satisfaction and reducing other side effects. Patient's compliance of treatment is associated with shorter hospital stay, less morbidity, early return to work and the pain associated with the procedure. In surgical techniques, ligation excision hemorrhoidectomy described by Milligan–Morgan is the time-tested procedure. It is traditionally viewed as a painful procedure.^[9]

Most operations are done under GA or regional anesthesia which are associated with side effects like nausea, vomiting, hypotension, urinary retention, and prolonging hospital stay. Prolonged hospital stay and absence from work place also imposes a financial burden.

Improvements in multimodal and preemptive analgesia, patient counseling have led to an increasing number of day care hemorrhoidectomies. A further evolution in this technique is open hemorrhoidectomy under local anesthesia (LA) [10]

In addition, there may be potential benefit in a decreased incidence of urinary retention. There is also substantial cost savings. In our scenario also, hemorrhoid is a common presentation and disease refractory to conservative management and Grades 3 and 4 requiring surgical ligation excision are avoided for surgery because of patient's apprehension related to regional and GA. Many of the patients attending our out-patient department (OPD) belong to lower socio-economic strata are also concerned about hospital stay and loss of working days. Keeping in view, above mentioned factors and worldwide changing trends in favor of day care surgeries, we prospectively evaluated the feasibility of open hemorrhoidectomy under LA and its comparison with procedure done under spinal anesthesia (SA) in terms of post-operative pain, hospital stay and other complications. Pudendal nerve is derived from S2, S3 and S4 nerve roots. It is the largest nerveplexus. It courses between the sacrotuberous and sacrospinous ligaments to reach the perineum. It leaves the pelvis through greater sciatic foramen, crosses the ischial spine medial to pudendal vessels and goes through the lesser sciatic foramen. It crosses upwards and forwards along the lateral wall of ischioanal fossa in Alock's canal, a sheath of oburator fascia. It gives off the inferior rectal nerve supplying the external anal sphincter and the skin around anus, perineal nerve supplying the skin of scrotum or labium majus and small twigs to muscles, dorsal nerve of penis or clitoris, the medial and lateral posterior scrotal or labial nerves and the visceral branches supplying the rectum and bladder are

the other branches. Some areas of perineal and vulval skin are innervated by the ilioinguinal, genitofemoral, posterior femoral cutaneous nerves and bt cutaneous nerves of S2 – S4. [11, 12]

Pudendal nerve block is performed transperineally in the lithotomy position. Injection of 5-10ml of local anesthetic is carried out just posterior to the ischial spine at the attachment of sacrospinous ligament. Ischial spine can be palpated transrectally or transvaginally. Pudendal block is often combined with perineal infiltration of local anaesthetic. After placing the needle underneath the ischial spine on each side, the needle is advanced 1 to 1.5 cms through the sacrospinous ligament and 5-10ml of lignocaine is injected. [13]

Materials and Method

This study was carried in department of General Surgery, Kerala Medical college and hospital. 60 patients with grade 3 and grade 4 were selected and were divided into group A and group B each consisting 30 and were operated under local and spinal anesthesia respectively.

Inclusion Criteria

- Patients with third and fourth degree hemorrhoids.

Exclusion Criteria:

- Patients with bleeding tendencies, or on anticoagulant therapy.
- Patients with history of anorectal operations.
- Patients with associated anorectal problems. (Fissures, fistulas.....etc.)
- Patients with the diagnosis of first and second degree piles who were given medical treatment or other non-operative measures.

All patients were subjected to:

Preoperative evaluation

- 1- Full history taking: Detailed history including personal data, presenting symptoms (bleeding,

prolapse, pain & pruritus ani). History of chronic illness (DM, HTN, Heart disease.....etc) previous operations, medications, allergy or blood transfusion.

2- Clinical examination: For detection of hemorrhoids, it's grading, complications and presence of other associated ano rectal diseases

Investigations

- Coagulation profile for all patients.
- Preoperative investigations as needed according to patients' condition.
- Colonoscopy in selected patients.

Technique

Premedication was achieved with intramuscular pentazocine 30mg. The premedication was to ensure conscious sedation during operation. Patients were placed in lithotomy position with intravenous fluid in situ. Before the commencement of the operation, a local anesthetic anal block was performed by perineal infiltration and pudendal nerve blocks (within the Alcock's canal of ischio – rectal fossa) using 40ml of 0.5% Lignocaine with 1:200,000 adrenalin (figure 1 – 4). Twenty ml was injected to achieve ring block around the anal opening, while 10mls each was injected on either side to achieve pudendal nerve blocks. All patients had standard ligation and excisional hemorrhoidectomy. Pain assessment was done using modified visual analogue scale. At the end of surgery, the anal canal was packed with Lignocaine gel impregnated gauze for hemostasis and some analgesia. Further post-operative analgesia was achieved by use of intravenous paracetamol infusion during first 24hours; thereafter tramadol tablets 100mg 12th hourly were given orally next 5days. All patients were placed on perioperative metronidazole for 24hours, twice daily sitz bath and after each defecation were ensured. Patients also had 10mls of liquid paraffin thrice daily with adult diet

(solid food plus roughages) commenced from the same day of operation.

Post-operative follow up

All patients were observed in the surgical ward. Pain scores were evaluated using Numerical rating scale (NRS) at 1,2,4,6 & 12 hours postoperatively (a scale of 0 to 10 was used, the patient was instructed to encircle the appropriate number that best describes his/her current pain where 0 indicated no pain and 10 the worst pain ever experienced) [11] . Occurrence of urine retention, hypotension, headache or other complications was recorded. Discharge on the same or next day depending on the patient's condition.

Statistical Analysis: Standard methods using SPSS version 19 for statistical analysis, Chi-square was used in appropriate situation. P value ≤ 0.05 is considered the level of significance.

Results

In our study 60 patients were operated. They were divided into two groups each consisting 30 in number, underwent Haemorrhoidectomy under local and spinal anaesthesia. 36 were male and 24 were females illustrated in table 1.

Table No 1

SEX	LA Group (Local Anesthesia)	SA Group (Spinal Anesthesia)
Male (36)	17	19
Female(24)	13	11

Out of 60 patients 42 patients had 3rd degree haemorrhoids and 18 had 4th degree. In our study we did not operate on 1st and 2nd degree haemorrhoids as they were excluded from the study.

Table No 2

Degree of Piles	LA Group (Local Anesthesia)	SA Group (Spinal Anesthesia)
3 rd Degree (42)	20	22
4 th Degree (18)	10	08

Table No 3

Operative Time	LA Group (Local Anesthesia)	SA Group (Spinal Anesthesia)
21-30 Minutes	19	22
31-40 Minutes	11	08

There was no significant difference in the operative time in patients undergoing surgery in both the groups.

Post-Operative pain: The pain was assessed in patients of both the groups using NRS at 1,2,4,6 and 12 hours after the surgery. After noting the scores we found that there was significant difference at 2nd and 4th hour after surgery where the patients who underwent surgery under local anesthesia had lower pain compared to those under spinal anesthesia. And during rest of the time there was no significant difference between both the groups.

Table No 4 (Post-operative Pain)

Pain Score	(Local Anesthesia Group)		(Spinal Anesthesia Group)	
	Mean	Range	Mean	Range
1 st Hour	0.6	(0 - 4)	0.3	(0 - 4)
2 nd Hour	0.8	(0 - 4)	1.0	(0 - 5)
4 th Hour	2.1	(0 - 5)	3.0	(0 - 7)
6 th Hour	2.4	(0 - 7)	3.5	(0 - 8)
12 th Hour	1.7	(0 - 4)	1.9	(0 - 4)

Post-Operative Complications

Post-operative complications like urinary retention, headache, hypotension, bleeding and deep infection was monitored. None of the patient who were operated under local anesthesia had urinary retention, headache and hypotension.

But patients who underwent surgery under spinal anesthesia had these complications, 5 patients had urinary retention, 4 had headache and 3 had hypotension. And there was no significant difference in other complications like bleeding and infection.

Table No 5 (Post-Operative Complication)

Complication	(Local Anesthesia Group)	(Spinal Anesthesia Group)
Urinary Retention	0	5
Head Ache	0	4
Hypotension	0	3
Bleeding	2	3
Deep Infection	0	0

Duration of hospital stay

Patients of local anesthesia group had comparatively shorter hospital. Among 30 patients operated under local anesthesia 23 patients stayed < 24 hours, 7 patients stayed 12 - 24 hours and no patient stayed greater than 24 hours.

In spinal anesthesia group 14 patients stayed 12 - 24 hours, 15 patients were in hospital for 24 - 48 hours and one patient stayed for more than 48 hours.

Discussion

Bansal et al. concluded in their study that LA is an alternative mode of anesthesia surgeons can safely carry out at their own while performing open hemorrhoidectomy. It was associated with a shorter hospital stay, low pain scores, and lower postoperative

complications; supporting routine use of LA for hemorrhoidectomy.² Alatis et al. concluded that immediate post-operative pain control and patient's comfort in immediate post-operative pain improved by continued effect of the LA and pre-operative analgesia; along with the presence of adrenaline with lignocaine also reduces the bleeding intraoperatively.⁴

4) Local anesthesia (LA) was first introduced to surgical procedure done for haemorrhoids with the aim of controlling pain which usually complicate the procedure. Subsequently, it was considered that the procedure can be done completely under LA. Surgeries done under LA have some important advantages. These advantages include early ambulation and subsequent discharge from the hospital, reduction in total cost of the procedure and it encourages doctor patient's interaction during the procedure [14].

5) One of the distressing complications of bottom surgeries, especially in elderly, is urinary retention which occurs in up to 17% of patients. [8,15,16] Perineal pain, reflex urethral sphincter spasm, prolonged motor/autonomic blockade, over hydration by intravenous fluids and restriction of movement are some of the important causes of urinary retention.^[8,16] PAB proves advantageous by reducing incidence of urinary retention by alleviating perineal pain and allowing free ambulation.

7) Operative time: The mean operative time in LA group and SA group was not significantly varied and this was comparable to the results of the study provided by Ho and his colleagues when comparing local with general anesthesia for hemorrhoidectomy had operative time comparable with that time for local anesthesia [17].

Postoperative pain: In the operative day the pain (determined by NRS at 1,2,4,6 and 12 hours after the operation) pain scores was similar in both groups except

at 4 and 6 hrs where pain scores were significantly lower in Local anesthesia group than Spinal A anesthesia group, these results were close to the results of Bansal et al; they found that: LA group has a significantly lower pain score at 6 hours [10].

No cases in the Local anesthesia group had postoperative urine retention, headache or hypotension, while in Spinal anesthesia group 5 patients had postoperative urine retention need catheterization, 4 patients had postoperative headache and 3 patients had postoperative hypotension from a total of 30 patients. This was a statistically significant difference. These results were agree with the results found by Bansal and his colleagues; In their study 36% of patients had urine retention, 24% had headache & 16% had hypotension [14].

Conclusion

Local anesthesia for hemorrhoidectomy with IV sedation is a safe technique, well tolerated and feasible. It should be considered an alternative to regional anesthesia as it provides more postoperative analgesia with lower pain scores, no hypotension, and headache or urine retention and shorter hospital stay.

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