

A DESCRIPTIVE STUDY OF DAY CARE STAPLED HAEMORRHOIDOPEXY SURGERY IN GRADE 3° AND 4° HAEMORRHOIDS UNDER LOCAL ANAESTHESIA

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ABSTRACT

BACKGROUND

Haemorrhoids are one of the most common afflictions of human beings from times immemorial. It is said that 40 percent of population have symptoms due to haemorrhoids at some time in their lives. Stapled haemorrhoidopexy under local anaesthesia has been emerging as the procedure of choice for symptomatic haemorrhoids.

Aims and Objective-

- To assess the advantage of performing stapled haemorrhoidopexy under local perianal block.
- To study the post-operative complications after stapled haemorrhoidopexy.
- To assess the feasibility of stapled haemorrhoidopexy in grade III and grade IV haemorrhoids.
- To assess the advantages of stapled haemorrhoidopexy in anal skin regression after surgery.

MATERIALS AND METHODS

60 patients of grade 3 and 4 haemorrhoids were operated by haemorrhoid stapler under local anaesthesia.

RESULTS

Stapled haemorrhoidopexy under local anaesthesia can be safely performed as a day care procedure in grade III and grade IV haemorrhoids. Patients following stapled haemorrhoidopexy under local anaesthesia have reduced post-operative pain, hospital stay, analgesic requirements and earlier return to work, early mobility out of bed, less operative time, short learning curve, less operative complications, cost effectiveness and good patient satisfaction.

CONCLUSION

Stapled haemorrhoidopexy under local anaesthesia is feasible to be used in those patients who are unwilling and unfit for other modes of anaesthesia with similar results with lesser complication rate and as a day care procedure.

KEYWORDS

Local Anaesthesia, Pudendal Block, Stapled Haemorrhoidopexy.

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BACKGROUND

Haemorrhoids are one of the most common afflictions of human beings from times immemorial. It is said that 40 percent of population have symptoms due to haemorrhoids at some time of their lives. Stapled haemorrhoidectomy was received with much enthusiasm, because it could offer patients a significantly improved post-operative comfort level.

Day surgery is becoming more common due to its cost effectiveness as well as patient acceptance. The increase in day case procedures and their complexity is related to improvements in surgical and anaesthetic techniques. Anal operations may be suitable surgical procedures for major ambulatory surgery.

Patients suffering from haemorrhoids, anal fistulas, anal fissures, perianal abscesses, pilonidal sinus or even anal carcinomas can be satisfactorily operated on as day surgery cases.

Aims and Objectives

This study is about treatment of haemorrhoidal disease with stapled haemorrhoidopexy under local anaesthesia. To rule out appropriateness of Stapled haemorrhoidopexy in grade 4 haemorrhoids and firing stapler at 2 cm from dentate line to see external skin regressibility on long term with patient satisfaction.

MATERIALS AND METHODS

A Descriptive Study was conducted in the Department of Surgery, MGM Medical College and associated MYH Hospital Indore between June 2015 and April 2017. Patients of age >15 years presenting with complaints of Haemorrhoids Grade III and Grade IV in MY Hospital Indore. Pudendal Block was used in all cases. Data collected include patient's age, sex, patient's complaints, associated medical and surgical conditions, proctoscopic findings, duration of surgery, mobilisation out of bed, hospital stay, return to work, post-operative early and late complications.

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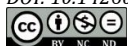
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Follow-up was done after surgery at day 1, 2 and 3 and at 2 weeks and 3 months and 6 months seen for improvement in complaints.

Sample size of 60 was taken for convenience.

Inclusion Criteria

Moderate anaemia Hb > 8 gm%, Grade III and IV haemorrhoids, external component of haemorrhoids.

Exclusion Criteria

Patients suffering from Grade I and Grade II haemorrhoids, anal fistulas, anal fissures, perianal abscesses, pilonidal sinus or even anal carcinomas.

Procedure

After doing routine investigations for diagnosis and check-up, patients were posted for surgery. All patients were given local anaesthesia for procedure with lithotomy position. Written informed consent was obtained. Patients were allowed clear fluids orally till 2 hours prior to entering the operation theatre. In the operating theatre the patient was placed in lithotomy position with a pillow under the hips and the legs held together, the buttocks were taped apart for better exposure and the perianal area cleansed with antiseptic solution before the area draped. The pudendal block was applied before any anal examination.

Thirty mL of local anaesthetic mixture of 0.25% bupivacaine and 1% lignocaine with adrenaline (1: 200,000) was used. The anaesthetic mixture was obtained by mixing 15 mL of 0.5% bupivacaine with 15 mL of 2% lignocaine with adrenaline (1: 100,000). The two drugs diluted each other to give the desired concentration. A 50 mm 26 gauge intramuscular needle was fitted onto 20 mL syringe containing the anaesthetic mixture. The anaesthetic mixture was deposited in the sphincter complex approximately 3 cm from the anal verge through the anococcygeal ligament into the ischioanal fossae to the level of levator ani muscle. A 5 mL solution was deposited at 3 o'clock position while withdrawing the needle. The needle was then directed 45 degrees anterolaterally and 5 mL was injected on both sides in the perisphincteric space while the needle was withdrawn. This was repeated in same fashion at 9 o'clock and anterior and posterior in perineum as shown below. The onset of anaesthesia is approximately 5 mins with blockage of branches to the anus from the anococcygeal and pudendal nerves, the inferior haemorrhoidal nerve portion and the anterior sphincteric nerve portion, complete anaesthesia of the perianal and anal canal ensues with relaxation of the sphincters that renders painless dilatation.

For this all patients were given a dose of antibiotic injection cefotaxime 1 gm IV 1 hr. prior to procedure. After lubrication of the anal margin, a two finger anal dilation was performed. Then circular anal dilator with obturator was introduced in anal canal with rotary movement. After removing the obturator, the prolapsed mucosa fell into the lumen of anal dilator. It is fixed to the perineum with four stitches, taken with silk no. 2-0 purse-string suture. Anoscope was introduced through the anal dilator. With 2-0 monofilament suture prolene on 25 - 30 mm curved round body needle purse-string suture was carried out 2 cm above the dentate line by rotation starting from 6 o'clock position. This ensured that suture line circularly included symmetric

ring of mucosa and submucosa of rectum and not the vaginal wall in females and muscle layers of rectum. The stapler was opened to its maximum diameter and seen for the red mark on an indicator over staple gun and then its anvil was placed beyond the purse-string suture. The stapler was slightly withdrawn to ensure the purse-string could be visualised and tied. The end of the suture was pulled out of the lateral holes of the PPH and knotted externally using a suture threader. During this step the stapler should be gently pushed in, while the thread was pulled by the assistant or surgeon so that the prolapsed mucosa began to be accommodated. The instrument was then tightened to the end, by full rotation of the stapler knob, clockwise till the marking in indicator turns to green.

The stapler was then fired and held closed for one minute to assist in haemostasis. The stapler's head was then opened through two full rotations till the marking in indicator comes to centre. Then the gun was slowly withdrawn and specimen of Doughnut was retrieved from the stapler and inspected to verify complete excision of the tissue and sent for Histopathological Examination. A digital examination confirmed that the stapler line was circumferential. A purse-string anoscope was inserted into the anus to inspect bleeding at the staple line. A 2-0 Vicryl suture was used to oversee the bleeding site if it bleeds more. Here in this procedure, external components were not dealt with directly as they get regressed in post-operative period. No attempt was made to remove external tag or any cutaneous component of haemorrhoid, as it would result in post-operative pain and nullify the benefit of stapled haemorrhoidectomy.

Data Collection and Analysis

Data were managed on an Excel spreadsheet. Descriptive analysis of demographic data, clinical parameters and post-operative complications were carried out. Quantitative variables were summarised by mean and standard deviation or median and interquartile range, and categorical variables were summarised by frequency (percentage). Statistical analysis was done using SPSS 16 software.

RESULTS

1. More cases in males 77% than females 23%.
2. More cases in Age 30 - 40 years, 46.66%.
3. To study the aetiology and pathogenesis, a much longer group matched with control is needed. The only significant feature found was that more than ½ of the patients were constipated.
4. Time taken for surgery in stapled haemorrhoidopexy group under local anaesthesia is mean 21.43 ± 3.57 mins, which is equivocal to Stapled Haemorrhoidopexy in spinal or GA.
5. Stapled haemorrhoidopexy leads to early mobilisation out of bed, about 91.67% patients mobilised in less than 6 hrs. This leads to shorter hospital stay and early return to work make the procedure day care.
6. Stapled haemorrhoidopexy under local anaesthesia had shorter hospital stay, mean 10.93 ± 7.12 hrs., that is less than 24 hrs. which make the procedure day care.
7. Stapled haemorrhoidopexy under local anaesthesia leads to early return to work. Mean 2.03 ± 0.69 days, which

reduces extra financial burden and increase level of satisfaction for patient.

8. Stapled haemorrhoidopexy under local anaesthesia was associated with lesser pain VAS score 2.98 ± 0.74 on 1st day, 1.95 ± 0.64 on 2nd day, 1.42 ± 0.53 on 3rd day compared to Stapled haemorrhoidopexy under Spinal/GA.
9. Stapled haemorrhoidopexy under LA was having less bleeding rates, 8.33% patient bleeds on 1st day and 5% on 2nd day also, but subside on 3rd day due to effect of local anaesthesia on local tissue.
10. None of the patients got Urinary Retention in our study, which is a common complication of spinal anaesthesia (15 - 18%).
11. On long-term follow-up, 2 patients out of 60 got faecal urgency resolved late, none got anal incontinence, 3 patients got intermittent bleeding not requiring major intervention, 1 patient got anal stenosis requiring surgical intervention later.

Associated Medical/ Surgical Condition	No. of Cases	Percentage
Bleeding P/R with Constipation	33	55.00
Bleeding P/R with Bladder outlet Obs.	7	11.67
Bleeding P/R with Constipation and Bladder outlet Obs.	6	10.00
Bleeding P/R	14	23.33
Total	60	100.00

Table 1. Associated Medical/ Surgical Condition

Complication	Day 1 st	Day 2 nd	Day 3 rd
Bleeding	5	2	0
Pain (By VAS Score)	3.05	1.91	1.41
Urinary Retention	0	0	0
Wound Infection	0	0	2

Table 2. Early Post-Operative Complications

Complication	2 Weeks	3 Months	6 Months
Faecal Urgency	2	0	0
Intermittent Bleeding	3	1	0
Anal Stenosis	0	1	0
Abscess, Anal Fissure, Fistula and Recurrence	0	0	0

Table 3. Late Post-Operative Complications

DISCUSSION

A hospital-based retrospective and prospective study was conducted in the Department of Surgery, MGM Medical College and associated MYH Hospital a tertiary care hospital, Indore in Central India between June 2015 and April 2017 with objective of finding feasibility under local anaesthesia and in Grade III and Grade IV haemorrhoids, operative time, hospital stay, mobility out of bed, analgesic requirements and return to work, learning curve, early and late operative complications, cost effectiveness and patient’s satisfaction and significance of stapler line above dentate line in anal skin regressibility. A total of 60 cases of Grade III and Grade IV haemorrhoids fulfilled the selection criteria and gave voluntary consent to be a part of the study were enrolled in this study. Following observations were made during the study-

1. Out of the 60 patients, 46 were male (77%) and 14 were female (23%). This signifies the male predominance of the disease.
2. Age range from 21 to 61+ age group. 46.6% cases were found in 31 to 40 years’ age group and 28.3% in 41 to 50 years’ age group. This shows that max. incidence of haemorrhoidal disease was in 4th and 5th decade. Alatise OI et al⁽¹⁾ also reported the mean age of 44.73 years
3. Bleeding P/R during defecation was the complaint of almost all patients. Bleeding P/R with manually reducible prolapsed haemorrhoids Grade III was 53% cases, bleeding P/R with complete prolapsed haemorrhoid Grade IV was in 47% cases. This shows more of the patients were from Grade III haemorrhoids and then Grade 4 haemorrhoids.
4. Associated medical and surgical condition-
 - Constipation was in 55% cases.
 - Bleeding P/R with Bladder Outlet Obs was in 11.67% cases.
 - Bleeding P/R with Constipation and Bladder outlet Obs was in 10% cases.
 - Only Bleeding P/R was in 14% cases.

This shows that more than 50% of the patients suffered from constipation, which may be the root cause of haemorrhoids. In other patients, another pathology may be either bladder outlet obstruction or bladder outlet obstruction associated with constipation.

5. Operative time in stapled haemorrhoidopexy under local anaesthesia was mean 21.43 ± 3.57 min. comparable to study done by Ho KS,⁽²⁾ and his colleagues (2000) with mean duration of surgery was 16 ± 4 min. and Hassan EA Younes⁽³⁾ with mean 23.5 ± 7.1 minute.

The operation time of Stapled haemorrhoidopexy under local anaesthesia was even shorter than the Stapled haemorrhoidopexy or open haemorrhoidectomy under spinal or general anaesthesia comparable to study done by Hiremath et al.⁽⁴⁾ 2012 with mean duration of surgery for Stapled haemorrhoidopexy under spinal was 29 minutes and for CH/ OH was 45 minutes.

Shorter duration of surgery has many advantages, in terms that it reduces anaesthesia related complication and also this makes the procedure feasible to be done in patients having added comorbid condition that having anaesthesia related risk.

6. In our study mobilisation out of bed was addition shorter for stapled haemorrhoidopexy group under local anaesthesia, mean 4.03 ± 1.82 hrs. Out of 60 patients, 55 patients (91.67%) mobilised in less than 6 hrs. and only 5 patients (8.33%) mobilised for more than 6 hrs. This signifying the patient’s comfort with the procedure and also helping in early and smooth rehabilitation, because of less pain and less tissue handling and trauma comparable to study done by Francesco Gabrielli,⁽⁵⁾ (2001) in which out of the 70 patients 62 patients mobilised as well as discharged 3 hrs. after the operation in good general condition and without pain (88.57%) and 8 patients (11.42%) were discharged the day after.
7. Post-operative hospital stay was found to be mean 10.93 ± 7.12 hrs. compared to study done by Jonathan C (2005).⁽⁶⁾ The patients in the local anaesthesia group were discharged from the hospital at a mean time of 12 hrs., while that for spinal anaesthesia was six days. In

another study, mean time of hospital stay in spinal haemorrhoidopexy group is 1.24 days in the study done by Bikhchandani J et al⁽⁷⁾ and 2.03 ± 0.81 days in study done by Khan NF et al.⁽⁸⁾ This shows that mean time of hospital stay is very much shorter in local anaesthesia than spinal anaesthesia, which makes the procedure day care.

8. Resumption of daily routine and office work is very important for any patient following any surgery in term of patient rehabilitation and also reduce the additional financial burden. In our study, mean time of resumption of daily routine or social work is mean 2.03 ± 0.69 days, which is comparable to study done by Esser S 2004.⁽⁹⁾ All subjects were back to work or social activities within three to four days, most within 48 hours. This can be attributed to less post-operative pain and early discharge of patient from hospital. As compared to stapled haemorrhoidopexy under spinal anaesthesia, mean time of return of daily routine and social work is a mean of 8 days in stapled group under spinal anaesthesia as study done by Idoor D Sachin 2017,⁽¹⁰⁾ which is very much longer than local anaesthesia under our study (p value < 0.05).
9. In our study, pain is measured according to visual analog score. At day 1 mean VAS score is mean 2.98 ± 0.74 , on 2nd day mean is 1.95 ± 0.64 and on 3rd day mean is 1.42 ± 0.53 as compared to study done by Praveen Singh Baghel et al 2016.⁽¹¹⁾ Among LA group patients, mean VAS scores were lower at all-time intervals of observation post-surgery as compared to that in SA group patient with statistically significant at 90 mins and 6 hrs. duration post-surgery. These results were similar to those found in the study by Bansal et al,⁽¹²⁾ where they found statistically significant lower pain scores at 6 hrs. In the study done by Ommer et al 2011,⁽¹³⁾ he evaluated patients in stapled haemorrhoidopexy in spinal anaesthesia. In 179 prospectively evaluated patients, the mean pain intensity score on the visual analog scale was 4.7 ± 2.4 on the day of the operation, 3.0 ± 1.0 on the first post-operative day and 2.3 ± 1.5 on the second post-operative day, which was higher than the VAS score in our patients. This conclude that in reference to pain stapled haemorrhoidopexy done under local anaesthesia had lesser pain score that leads to early recovery and discharge of the patient from hospital that makes procedure day care and early recovery and resuming early daily routine work.
10. Bleeding was assessed at intraop just after surgery on day 1, day 2 and day 3. Out of 60 patients, bleeding was found in 5 patients on day 1 (8.33 %) and 3 patients on day 2 (5%) and none on day 3. None of the patients required surgical intervention and bleeding could be managed conservatively.

In spinal anaesthesia, study done by Palimento D et al⁽¹⁴⁾ showed 21.6% patients had bleeding complication that shows in our results lesser bleeding complication. This can be attributed to the effect of adrenaline added to xylocaine that leads to vasoconstriction and less bleeding.
11. None of the patients in our study got urinary retention and passed urine under 6 hrs. as compared to spinal anaesthesia in study done by Chik B et al.⁽¹⁵⁾ Out of the

90 patients in spinal group, 7 patients got urinary retention. The incidence of urinary retention following haemorrhoidectomy was 15.2%. General anaesthesia and stapled haemorrhoidopexy were independent significant factors associated with a lower incidence of urinary retention. This conclude chances of urinary retention is lesser after local anaesthesia than the spinal and GA.

12. Out of the 60 patients, 2 got wound infection on 3rd day, which was managed conservatively on OPD basis. No admissions were required.

On long-term follow-up, anal incontinence was not found in any patients. A study by KH Khalil et al⁽¹⁶⁾ also showed no incidence of anal incontinence in the stapled haemorrhoidopexy group. 2 patients out of 80 got faecal urgency at 2 weeks, which resolved later. 3 patients at 2 weeks and 1 patient at 3 months complaints of intermittent bleeding was managed conservatively. Anal stenosis is reported in 1 patient at 3 months, which may be due to firing of stapler wrongly 3.5 cm or 4 cm above the dentate line which causes stenosis requiring surgical intervention.

No case of abscess, fissure, fistula or recurrence noted. Only some of the patients complained of minor itching and tingling at anal verge, which is managed conservatively.

13. In our study, we fired stapler at 2 cm from dentate line and results were observed on redundant mucosa at 2 weeks. In 80% cases of prolapsed redundant mucosa no more was visualised, which increased the patient's satisfaction towards surgery. In 15% cases found at anal verge and in 5% cases not regressed, which regressed on follow-up examination. It concludes that firing stapler at 2 cm from dentate line does not cause increase in pain score, but firing below 2 cm may cause procedure painful. So judicious firing especially in Grade IV haemorrhoids where mucosa protrudes outside anal verge, which causes patient discomfort can be avoided if firing done at 2 - 3 cm distance from dentate line. Staple line distance above the dentate line meaningfully impacts comfort-based outcomes.⁽¹⁷⁾

Limitation of the Study

Due to short duration of the study, convenience sampling technique was followed. Thus sampling size was also calculated by convenience. The results of the study cannot be generalised due to the potential bias resulting from the sampling technique and sample size estimation.

CONCLUSION

Stapled haemorrhoidopexy under local anaesthesia can be safely performed as a day care procedure in Grade III and Grade IV haemorrhoids. Patients following stapled haemorrhoidopexy under local anaesthesia has reduced post-operative pain, hospital stay, analgesic requirements and earlier return to work, early mobility out of bed, less operative time, short learning curve, less operative complications, cost effectiveness and good patient satisfaction. This can be used in those patients who are unwilling or unfit for other forms of anaesthesia. Staple line

distance above the dentate line meaningfully impacts over redundant mucosa outside the anal verge.

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