Original Research Article

A Pragmatic Study of Management of Grade 3 and Grade 4 Haemorrhoids

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Abstract

Introduction: The word 'Hemorrhoids' is derived from Greek word Haima (bleed) + Rhoos (flowering), means bleeding. Hemorrhoids consist of vascular cushions that are intimately involved in the maintenance of continence and discrimination between flatus and faeces. **Material and Methods:** It is a hospital based prospective observational study conducted at Department of Surgery at a Tertiary care teaching hospital over a period of 2 years from September 2018 to August 2020. Minimum 100 consecutive cases of Grade 3 and Grade 4 hemmorhoids were considered**.** A detailed history taking and a thorough clinical examination, which included digital rectal examination and proctoscopy was carried out after admission. Apart from routine preoperative investigations sigmoidoscopy or colonoscopy were carried out if it was indicated. **Results:** There was a significant difference between the 3 groups in terms of Duration of Surgery (Minutes) ($\chi 2 = 80.776$, $p = <0.001$), with the median Duration of 76 minutes being highest in the Stapler group, next being with harmonic scalpel and then conventional hemorrhoidectomy in our study. There was a significant difference between the various groups in terms of distribution of intra-operative bleeding ($\chi 2 = 175.460$, $p = <0.001$). Participants in the Stapler group had the largest proportion of mild intra-operative bleeding. Participants in the Harmonic group had the largest proportion of moderate intra-operative bleeding. Participants in the Conventional group had the largest proportion of severe intra-operative bleeding. **Conclusion:** Amongst the three procedures, Stapled hemorrhoidectomy was superior to others as it has shown lower postoperative pain severity, less secondary bleeding, less urinary retention and led to earlier return to work in patients with hemorrhoids, based on telephone interviews over follow-up period.

Keywords: Haemorrhoids, Stapled haemorrhoidectomy, Conventional Haemorrhoidectomy.

Introduction

The exact definition of hemorrhoids has been difficult to formulate, if for no other reason than that the pathophysiology of this condition remains elusive. The word, hemorrhoid (haima = blood; rhoos = flowing), derives from the Greek adjective, hemorrhoides. [1] As a disease entity, hemorrhoids have been reported to plague the human race since the earliest history of man. [2] Data from the National Centre for Health Statistics suggest that approximately 10 million people in the United States suffer from hemorrhoids. [3] The exact prevalence of hemorrhoids is difficult to estimate, However, because patients presenting with any anorectal symptoms assume that they are suffering from this condition, therefore, the ultimate diagnosis and management truly must rest with an experienced clinician. [4]Hemorrhoids consist of vascular cushions that are intimately involved in the maintenance of continence and discrimination between flatus and faeces. These cushions are normally maintained in position by the suspensory ligaments. [5] The most widely supported theory is that symptomatic hemorrhoids result from disruption of these ligaments permitting downward prolapse of the cushions into and beyond the anal canal during defaecation. [6] This prolapse results in constriction of the hemorrhoids between the faecal bolus and the ring of the sphincter mechanism. As a consequence, swelling due to vascular engorgement occurs with a sensation of fullness and bleeding being common symptoms. [7-10]While initially spontaneous reduction is the norm, over time patients may find it necessary to reduce their hemorrhoids manually. This is a key symptom in defining the need for formal surgical intervention. With further chronicity, permanent prolapse may occur. This situation results in the other common hemorrhoidal symptoms of mucus seepage with difficulties in hygiene and pruritus, loss of discrimination and continence to flatus or even mild faecal incontinence.

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Material and Methods

It is a hospital based prospective observational study conducted over a period of 2 years from September 2018 to August 2020.Minimum 100 cases consecutive cases of Grade 3 and Grade 4 Hemorrhoids getting admitted for surgery in all units of Department of Surgery at a Tertiary care teaching hospital.

Inclusion Criteria

Age group- 18 years to 75 years with symptomatic cases of Grade 3 and Grade 4 Hemorrhoids diagnosed clinically.

Exclusion Criteria

- Patients diagnosed with Grade 1 and grade 2 hemorrhoids.
- Patients diagnosed with known bleeding diathesis.
- Thrombosed and infected piles.
- Intercurrent anal pathology (i.e , fistula and/or fissure)
- Rectal prolapse patients.

A detailed history taking and a thorough clinical examination, which included digital rectal examination and proctoscopy was carried out after admission. Apart from routine preoperative investigations, sigmoidoscopy or colonoscopy were carried out if it was indicated. Informed consent was taken prior to surgery and the cases were divided into 3 groups after explaining the risks and benefits of the three procedures and the procedure opted by the patients: - Staple Hemorrhoidectomy group: 18 cases
Conventional Hemorrhoidectomy group: 49 cases
Hemorrhoidectomy using Harmonic Scalpel group: 34 cases
All patients underwent operation under spinal/caudal anaesthesia. The operative time and any intra operative bleeding was noted. The patients were followed up in the post-operative period for pain, urinary symptoms, and after discharge from the hospital, follow-up was in the form of Out-patient review 4 to 6 weeks after the procedure and a telephonic questionnaire up to 3 months for any recurrence or anal stenosis.Post-operative pain was managed according to the guidelines of the French Anaesthesiology Society.Pain was assessed using a visual analogue scale (VAS) in which 0 corresponds to "no pain" and 10 to "maximum pain". The aim was to keep the pain down to a VAS score of less than 3 at all times. Prescribed analgesics were classified using the World Health Organisation (WHO) system.Analgesics were administered on the basis of the VAS score in the following way:
VAS < 3 :a WHO Class I analgesic
VAS 3 – 5 :a WHO Class II analgesic
VAS > 5 a WHO Class III analgesic
If a given analgesic was having an inadequate but partial effect, an analgesic of the next class up was prescribed. Patients were discharged once their pain was being effectively managed with oral analgesics.The intra-operative blood loss estimation is difficult task, especially when blood is mostly absorbed by gauze. Although many methods for estimation are available, like the gravimetric method (weighing of pre- and post- procedure gauge), it's not routinely used.In this study, we have used a method for estimating intra-operative blood loss absorbed by surgical gauze. Out of the three different sizes of commonly used surgical gauze (10x10cm, 30x 30cm, and 45x45cm), here we used (10x10cm) size gauze to test for their absorptive capacity and used it to reconstruct the analogue. The pattern of the blood spill in the (10x10cm) gauze represented ≤ 25%(upto 3ml), 50%(>3ml to <12ml) and ≥100% (≥12ml) saturation. A visual analogue scale was created to estimate the blood absorbed by gauze that could be easily remembered by staff. Visual estimation is most common method of estimation of blood loss.
Mild bleeding: ≤ 25% gauze saturation (upto 3ml)
Moderate bleeding: 50% gauze saturation (>3ml to <12ml)
Severe bleeding: ≥100% gauze saturation (≥12ml)
Other parameters evaluated were length of hospital stay, and whether there were recurrence or anal stenosis in the follow up period which was for 3 months in the study.

Result

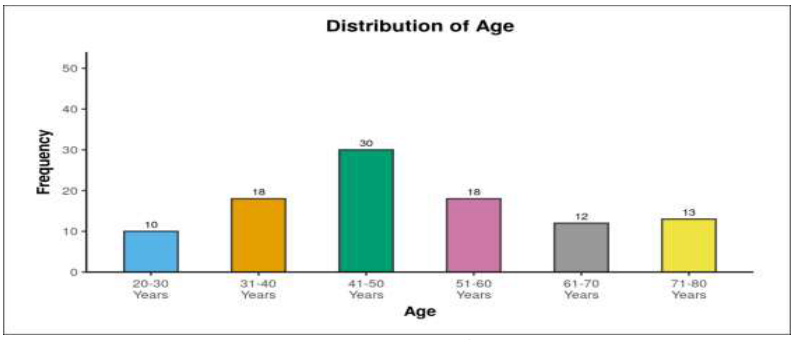

Fig 1:Distribution of age

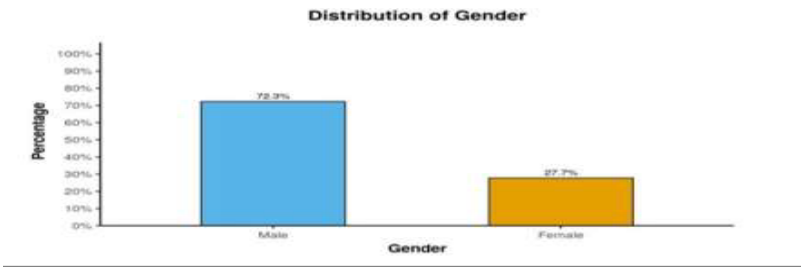

Fig 2: Gender Distribution

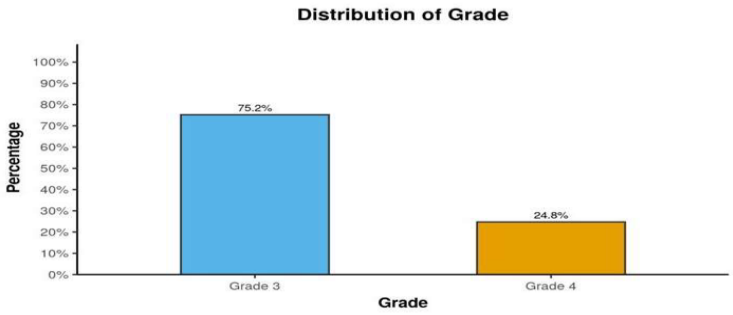

Fig 3: Distribution of participants in terms of grade

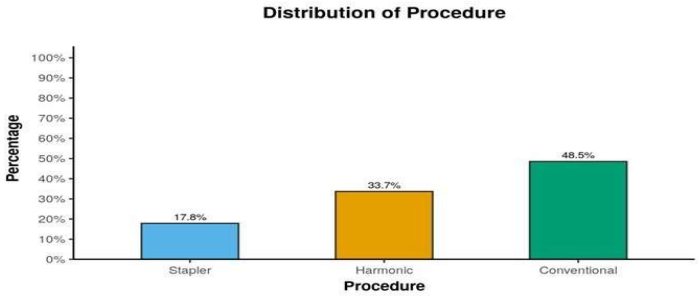

Fig 4: Distribution of the participants in terms of procedure

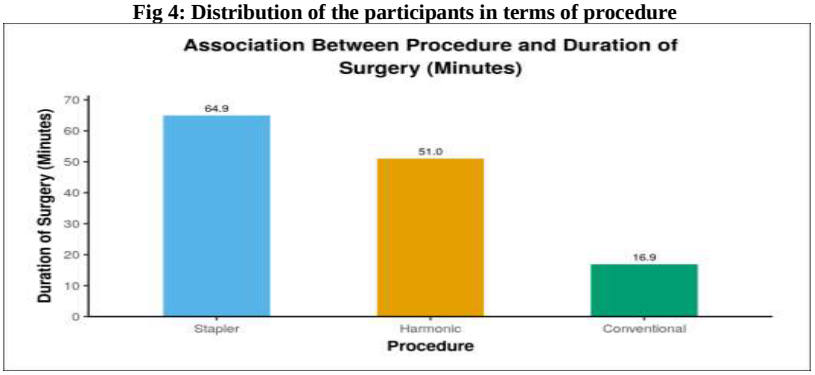

Fig 5: Distribution of the participants in terms of duration of SURGERY (mins)

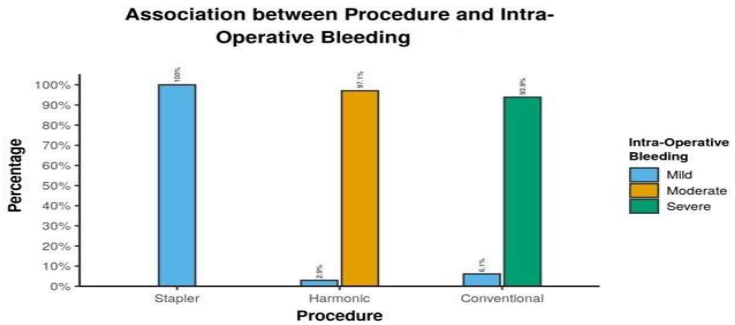

Fig 6: Association between procedure and intra-operative bleeding

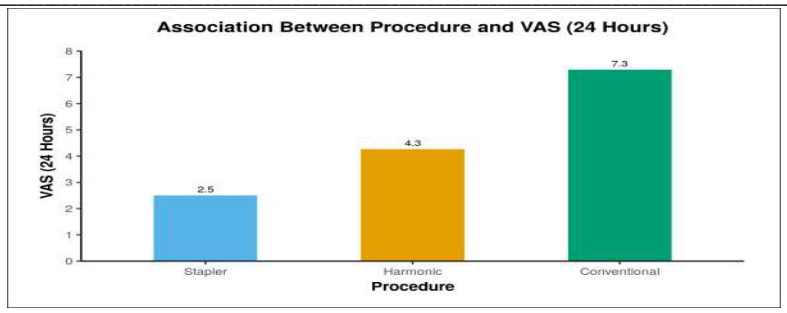

Fig 7:Association between procedure and VAS at (24 Hours)

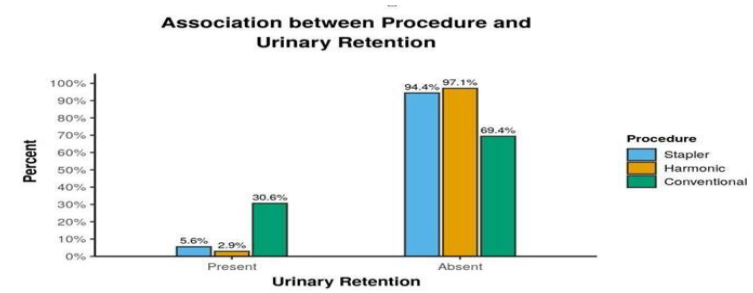

Fig 8:Association between procedure and urinary retention

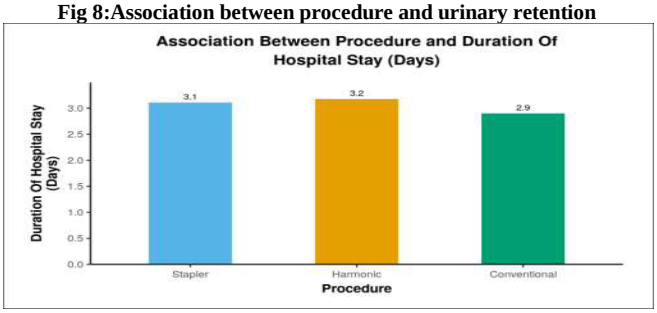

Fig 9:Association between procedure and duration of hospital STAY (DAYS)

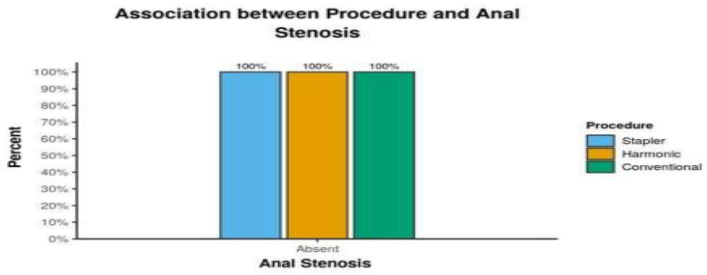

Fig 10:Association between procedure and anal stenosis

Statistical Analysis

Data were entered in a personal computer and analyzed using computer software, Statistical Package for Social Sciences (SPSS) Version 23. Data are expressed in its frequency and percentage as well as mean and standard deviation. To elucidate the associations and comparisons between different parameters, Chi-square ($\chi 2$) test was used as nonparametric test Student's t test was used to compare mean values between two groups. For all statistical evaluations, a two-tailed probability of value, $p < 0.05$ was considered significant.

Discussion

Many studies are done in the western setup and the results may not be applicable to the Indian scenario. The present study is a 'Pragmatic Study'. They are designed to evaluate the effectiveness of interventions in real-life routine practice conditions, whereas explanatory trials aim to test whether an intervention works under optimal situations. Pragmatic trials produce results that can be generalized and applied in routine practice settings.Our results were statistically analysed and compared with available literature. Most common symptom observed on presentation were bleeding per rectum followed by mass per rectum, and painful defecation.

Duration pof Surgery

There was a significant difference between the 3 groups in terms of duration of surgery (minutes) ($\chi 2 = 80.776$, $p = <0.001$), with the median duration of 76 minutes being highest in the Stapler group, next being with harmonic scalpel and then conventional hemorrhoidectomy in our study.

Intra-Operative Bleeding

In this study, Chi-squared test was used to explore the association between 'Procedure' and 'Intra-Operative Bleeding'. There was a significant difference between the various groups in terms of distribution of Intra-Operative Bleeding ($\chi 2 = 175.460$, $p = <0.001$). Participants in the Stapler group had the largest proportion of mild intra-operative bleeding. Participants in the Harmonic group had the largest proportion of moderate intra-operative bleeding. Participants in the Conventional group had the largest proportion of severe intra-operative bleeding.

Post-operative Pain (Vas Score) At 24 Hours

The variable VAS (24 Hours) was not normally distributed in the 3 subgroups of the variable Procedure. Thus, non-parametric tests (Kruskal Wallis Test) were used to make group comparisons. The VAS (24 Hours) in the Procedure: Stapler ranged from 2 - 4. The VAS (24 Hours) in the Procedure: Harmonic ranged from 4 - 5. The VAS (24 Hours) in the Procedure: Conventional ranged from 5 - 8. There was a significant difference between the 3 groups in terms of VAS (24 Hours) ($p = <0.001$), with the median VAS (24 Hours) being highest.

Urinary Retention: There was a significant difference between the various groups in terms of distribution of Urinary Retention ($p = 0.002$). Participants in the group Procedure: Conventional had the largest proportion of Urinary Retention: 30.6%. Participants in the group Procedure: Harmonic had the largest proportion of absent Urinary Retention: 97.1%.

Duration of Hospital Stay: The variable Duration of Hospital Stay (Days) was not normally distributed in the 3 subgroups of the variable Procedure. Thus, non-parametric tests (Kruskal Wallis Test) were used to make group comparisons. There was no significant difference between the groups in terms of Duration of Hospital Stay (Days) ($p = 0.668$).In this study, length of hospital stay was significantly higher in Stapled Hemorrhoidectomy group, unlike in other studies which shows less post operative stay with Stapled Hemorrhoidectomy. There were no medical reasons for their long stay. Patients were ambulatory fit for discharge after the removal of pack the very next day. However, they preferred to stay back due to other issues.

Complication

In the present study patients were followed up postoperatively till 3 months. In our study, urinary retention was the most frequently seen complication. 16.8% of patients in all three groups had urinary retention. A number of factors may be implicated as leading to urinary retention, these include spinal anesthesia, fluid overload, rectal packing, rectal pain and spasm and bulky dressings. They were managed by catheterisation as and when required and removed subsequently.In conventional hemorrhoidectomy group, one case had postoperative bleeding after 7 days i.e, delayed haemorrhage probably as a result of sepsis within the pedicle and was managed with readmission and suture ligation. None of the patients in the present study had stenosis, fecaloma, fecal incontinence, recurrent hemorrhoids or mucosal prolapse during 3 months of follow up.The limitations to the study is that it should have had a longer follow-up period, at least for one year to assess the significant difference in number of hemorrhoidal prolapse, anal stenosis and recurrence between the techniques.

Conclusion

Amongst the three procedures, Stapled hemorrhoidectomy was superior to others as it has shown lower postoperative pain severity, less secondary bleeding, less urinary retention and led to earlier return to work in patients with hemorrhoids, based on telephone interviews over the follow-up period.

References

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