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# Comparative Study between Open and Closed Hemorrhidectomy.

[1]Dr.P. Nancharaiah, MS, [2]Dr. Bharath Vamsi bogavalli,MS. Vamsi bogavalli,MS. ,[3]Dr.M.C.Venkateswarulu,MS.
*[1]Professor of Surgery,[2]Senior Resident in Surgery,[3]Assistant Professor,Dept. Of General Surgrery,Siddhartha Medical College,Vijayawada.*
*Corresponding Author: [1]Dr.P. Nancharaiah*

***Abstract**: Haemorrhoids are defined as enlarged anal cushions, which are comprised of the ano-rectal lining and an engorged vascular plexus below it, in the loose areolar tissues.[1] Hemorrhoids are varicosities of the hemorrhoidal plexus of veins of the rectum.Hemorrhoids are the penalty the humans pay for attainment of erect posture. It is common disease affecting people of all ages and both sexes[2]. It has been estimated that 50% of the population has haemorrhoids by the age of 50 years[3, 4] and these are supposed to be the commonest cause of rectal bleeding [5]. Haemorrhoidectomy remains the treatment of choice for symptomatic grade-III and IV hemorrhoids, either by injection sclerotherapy, rubber band ligation, cryotherapy , infrared coagulation, bipolar diathermy and Lord's dilatation. circular stapler, harmonic scalpe',ligasure, laser and a bipolar electro-cautery or most commonly by open hemorrhoidectomy(Milligan-Morgan) or closed hemorrhoidectomy(Ferguson) method. The present study was undertaken on 70 patients admitted in Dept. Of General Surgrery,Siddhartha Medical College,Vijayawada who are randomized to both open and closed techniques of hemorhoidectomy and compared with the outcome of the two techniques.*

***Aims and Objectives***

***Aim:** the aim of study is to compare closed v/s open haemorrhoidectomy regarding post-operative wound healing, pain and postoperative course.*

***Objectives:** to compare open haemorrhoidectomy with closed haemorrhoidectomy in regard to*

- *Post-operative pain.*
- *Rate of healing.*
- *Postoperative course for 3weeks,6 weeks and 3 months follow up.*

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## I. Introduction

Haemorrhoids are defined as enlarged anal cushions, which are comprised of the ano-rectal lining and an engorged vascular plexus below it, in the loose areolar tissues.[1] Hemorrhoids are varicosities of the hemorrhoidal plexus of veins of the rectum. Hemorrhoidectomy is one of the most commonly performed general surgery operations andanal canal is one among richly innervated tissue in the digestive tract. Thus, pain after haemorrhoidectomy is certainly an expected postoperative outcome. Open hemorrhoidectomy was the surgery of choice for hemorrhoidal disease in the past. This has been replaced by closed hemorrhoidectomy at present as the technique is much more beneficial to the patient in terms of post-operative outcome. Newer techniques such as stapler hemorrhoidectomy have also been put into practice in view of faster healing and less post-operative pain and shorter duration of hospital stay.The exposed area of the anal canal following open haemorrhoidectomy has been implicated as the cause of the pain. For this reason, closed haemorrhoidectomy has been advocated.

## II. Closed Hemorrhoidectomy

In 1931 Fansle described a technique of intra anal anatomic dissection was conducted which was later developed and modified by Ferguson and Heaton in 1959.

**Principle**

- To remove as much vascular tissue as possible without sacrificing anoderm.
- To minimize postoperative serous discharge by prompt healing with lining of anal canal (anoderm).
- To prevent the stenosis that may complicate healing of large raw wounds by granulation tissue.

**Indications**

- Excessive bleeding,Severe prolapse or pain

**Contraindications**

- Crohn's disease**,**Portal hypertension**,**Leukaemia,Lymphoma**,**Bleeding disorders

**Technique**

Under adequate anesthesia a Hill-Ferguson anal retractor is introduced and hemorrhoid is exposed. An elliptical incision is made with scalpel extending from anorectal ring to perianal region, which is deepend down to underlying sphincter musculature and hemorrhoid is dissected off. Hemostasis is secured and pedicle s clamped and tied off. Hemorrhoidectomy wound is closed by suturing the gap in lining of anal canal. Perianal region and anal orifice are covered with dressing.

## III. Open Hemorrhoidectomy

It is practiced most commonly in UK as the Milligan-Morgan operation under spinal or general anesthesia in lithotomy position.

**Technique**

The skin covered component of each main pile is seized with artery forceps and retracted outward, the purple mucosal component is grasped and withdrawn, with a V-shaped incision the anal, perianal dissection is carried out to free cushions of the internal sphincter for 1.5 to 2 cms and pedicle is transfixed with an absorbable or non-absorbable suture. The hemorrhoid is the excised a few millimeters below apical ligature, and adequate bridge of skin and mucosa should be left in between. The final word "if it looks like a clover, the trouble is over, if it looks like a dahlia, it surely is a failure".

**Materials and methods:**

The presentstudy is a prospective study from september2014 to march 2016. The data for which was drawn from patients attending SIDDHARTHA Medical college and general hospital, vijayawada ,a total of 70 cases.In the present study 70 cases of $2^{nd}$ and $3^{rd}$ degree hemorrhoids were chosen with complaints of bleedig per rectum, pain during defecation, mass per rectum, discharge and irritation. A detailed history of each patient was taken with personal history, family history, diet hstory, with systemic examination of respiratory , cardiovascular, per abdominal examination to know any associated disease and to rule out any cause predisposing to hemorrhoids and local examination icluding proctoscopy as per the proforma made for the study and entered in the proforma. Willing patients were selected and examined and investigated as per proforma. Analysis was made on basis of percentages, mean, standard deviation, binomial probability tests.

**Inclusion criteria**

- Patients with complaints of bleeding per rectum, mass per rectum, pain, irritation and discharge per rectum.
- Patients with $2^{nd}$ and $3^{rd}$ degree hemorrhoids suitable for surgery.

**Exclusion criteria**

Hemorrhoids associated with complications (ulceration, recurrent cases, strangulation).

## IV. Observation And Results

**Table 1 :** Age And Sex Distribution

| AGE IN YEARS | MALE | FEMALE | TOTAL |
|---|---|---|---|
| <20 | 1 | 0 | 1 |
| 21-30 | 4 | 2 | 6 |
| 31-40 | 7 | 3 | 10 |
| 41-50 | 18 | 5 | 23 |
| 51-60 | 12 | 5 | 17 |
| ABOVE 60 | 12 | 1 | 13 |
| TOTAL | 54 | 16 | 70 |

**Table 2 :** Sex Distribution

| SEX DISTRIBUTION | FREQUENCY n= 70 | PERCENTAGE |
|---|---|---|
| MALE | 54 | 77.1 |
| FEMALE | 16 | 22.8 |

**Table 3 :** Degree Of Hemorrhoids In The Study Group

| DEGREE OF HEMORRHOIDS | FREQUENCY | PERCENTAGE |
|---|---|---|
| SECOND | 32 | 45.7 |
| THIRD | 38 | 54.3 |

**Table 4:** Post Procedure Complications

| COMPLICATION | OPEN SURGERY n=35 | CLOSED SURGERY n= 35 |
|---|---|---|
| SEROUS DISCHARGE | 25 | 23 |
| PAIN | 26 | 23 |
| URINARY RETENTION | 0 | 0 |
| MINOR BLEEDING | 14 | 2 |

**Table 6 :** Pain And Healing 3 Weeks Followup

| COMPLICATION | OPEN n=35 AND (%) | CLOSED n=35 AND (%) |
|---|---|---|
| PAIN | 15(42.8) | 15(42.8) |
| HEALING AT 3WKS | 14(40) | 18(51.4) |
| SOILING | 10(28.5) | 5(14.2) |
| HEALING AT 6WKS | 21(60) | 29(82.8) |

| COMPLICATIONS POST SURGERY | OPEN METHOD (no of patients) | CLOSED METHOD (no of patients) |
|---|---|---|
| SEROUS DISCHARGE | 25 | 23 |
| PAIN | 26 | 23 |
| RETENTION OF URINE | 0 | 0 |
| MINOR BLEEDING | 14 | 2 |

## V. Discussion

Hemorrhoidectomy is one of the most commonly performed general surgery operations andanal canal is one among richly innervated tissue in the digestive tract. The present study was undertaken on 70 patients randomized to both open and closed techniques of hemorhoidectomy and compared with the outcome of the two techniques. In the present study, the mean age was 48 yrs with range of 18 – 70 yrs with a male preponderance, i.e. males are more in number than females. , patients presented with a common complaint of bleeding p/r with a percentage of 81.4%.Mass per rectum and pain were next common presentations with 62.9% and 50% respectively.Second degree hemorrhoidal disease was 45.7% and third degree hemorrhoidal disease was 54.3%. The study showed that the patients who underwent open technique of hemorrhoidectomy had more post procedural complications with regard to serous discharge, pain and minor bleeding on 1$^{st}$post-operative day as compared to closed technique of hemorrhoidectomy. On follow up after 3 weeks of post-operative period, the percentage of pain in both open and closed techniques of hemorrhoidectomy was same 42.8%.Soiling at the end of 3 weeks follow up in open technique of hemorrhoidectomy was 34.2% and in closed technique it was 31.4%.

Similarly healing of the wound post procedure at the end of 3 weeks follow up in open technique was 40% and 51.4% in closed technique of hemorrhoidectomy.After 6 weeks of post procedure, follow up showed significant reduction in pain and soiling with healing of 60% in open technique and 82.8% in closed technique.

In the present study the post procedure complications are compared between open technique and closed technique of hemorrhoidectomy with regard to serous discharge, pain ($p<0.05\%$), urinary retention and minor bleeding ($p<0.05\%$).

Serous discharge was seen in 25 patients of the total 35 in open technique and 23 patients of the 35 total in closed technique. Pain was noted in 26 patients in open technique and in 23 patients in closed technique. There were no cases of urinary retention in both the techniques. Open technique of hemorrhoidectomy had 14 patients with minor bleeding and closed hemorrhoidectomy technique had 2 patients with minor bleeding. Post-operative wound healing at 3 weeks duration of the present study in open technique is 40% and 51% in closed technique. This shows that the percentage of healing in open technique is comparable to Arroyo et al and percentage of healing in closed technique is less than in Arroyo et al, Arbman et al and You.S.Y et al. On follow up at 6 weeks, pain post procedure after 6 weeks of follow up in both open technique and closed technique was found to be lower in the present study than compared to the study by Arbman et.al. in which Pain was higher in open technique than in the closed technique. the percentage of healing after duration of 6 weeks post-operatively shows that 60% in open technique healed completely and 82.8% in closed technique healed well.

| PARAMETER | PRESENT STUDY | ARROYA ET AL | ARBMAN ET AL | YOU.S ET AL | GENCOSMAN OGLU ET AL | CARAPETI ET AL | HO ET AL |
|---|---|---|---|---|---|---|---|
| PATIENTS OPEN/CLOSED | 35/35 | 100/100 | 39/38 | 40/40 | 40/40 | 17/18 | 34/33 |
| SPHINCTEROTOMY | NO | NO | YES | NO | NO | NO | NO |
| LESS PAIN | CLOSED | CLOSED | NS | CLOSED | OPEN | NS | NS |
| FASTER WOUND HEALING | CLOSED | CLOSED | CLOSED | CLOSED | CLOSED | NS | OPEN |

In the present study, the clinical study and management of hemorrhoids,a comparative study of closed hemorrhoidectomyv/s open hemorrhoidectomy, the aim of the study is to compare closed v/s open hemorrhoidectomy regarding post-operative wound healing, pain and post-operative course.

Methods

Seventy patients that are taken for surgery will be randomized into closed and open hemorrhoidectomy group of thirty five each. These 70 cases of symptomatic grade 2 and 3 hemorrhoids were treated.35 in each of closed and open hemorrhoidectomy group

## VI. Summary

- The mean age was 48 yrs with range of 18 – 70 yrs. Patients were followed up to 3months with the above mentioned criteria.
- In the present study the number of cases below the mean age of 48 years are more than that of them above the mean, with a male preponderance, i.e. males are more in number than females.
- The most common clinical presentation of hemorrhoidal disease was bleeding p/r with a percentage of 81.4%.
- Mass per rectum and pain were next common presentations with 62.9% and 50% respectively.
- Second degree hemorrhoidal disease was 45.7% and third degree hemorrhoidal disease was 54.3%.
- The study showed that open technique of hemorrhoidectomy had more post procedural complications with regard to serous discharge, pain and minor bleeding on 1$^{st}$post-operative day as compared to closed technique of hemorrhoidectomy.
- At 3 weeks of follow up the percentage of pain post procedural in both open and closed techniques of hemorrhoidectomy was same 42.8%.
- Soiling at the end of 3 weeks follow up in open technique of hemorrhoidectomy was 34.2% and in closed technique it was 31.4%.
- Similarly healing of the wound post procedure at the end of 3 weeks follow up in open technique was 40% and 51.4% in closed technique of hemorrhoidectomy.
- After 6 weeks of post procedure, follow up showed significant reduction in pain and soiling with healing of 60% in open technique and 82.8% in closed technique.

## VII. Conclusion

Hemorrhoids are the most common cause of bleeding per rectum and mass per rectum in humans due to attainment of erect posture. The commonly performed surgery is the open hemorrhoidectomy popularized by Milligan- Morgan. In this study the closed hemorrhoidectomy procedure was compared with the open technique with respect to post-operative pain, wound healing and postoperative course.

The study states that the post-operative pain was less along with faster wound healing in the closed hemorrhoidectomy technique.

Thus this study concludes that the technique of closed hemorrhoidectomy has more patient compliance in terms of less post-operative pain and faster wound healing time than compared to the open technique of hemorrhoidectomy, and hence performing closed technique of hemorrhoidectomy is more useful for the patient in terms of outcome**.**

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