

Short Communication

Management of Haemorrhoids Using BEIM Technique

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Abstract

Haemorrhoids are the vascular structures in the anal canal and could be so painful. In our prospective study carried out in Osmania General Hospital, twenty patients with grade III and IV hemorrhoids were included. These patients were taken up for Surgery by BEIM technique. Patients demographics, Operative details, Number of analgesics, Post Operative pain, Operating time, Intra-operative blood loss, Hospital stay, Early and delayed complications, time off from work and normal activity were recorded timely. Diagnosis was carried out based upon Digital Rectal Examination and proctoscopy. Significant pain reduction was observed in post operative patients. Results confirm that initial concept of elimination of lateral thermal injury does translate into less postoperative pain. BEIM group definitely showed various advantages over MM group.

Keywords

- Hemorrhoidectomy
- BEIM (Biological Electronic Impedance Auto-Measurement) technique
- MM (Milligan & Morgan)group
- Anorectal disorders

INTRODUCTION

Hemorrhoids are the most common anorectal disorders encountered in clinical practice. Surgical treatment is considered to be the best therapeutic mode for hemorrhoidal disease [1,2]. Hemorrhoids are mainly classified as external and internal hemorrhoids where internal hemorrhoids are classified under I-IV grades based upon the degree of prolapsed. The classification is as follows:

Grade I: Just prominent blood vessels; No prolapse

Grade II: Prolapse upon bearing down with spontaneous reduction

Grade III: Prolapse upon bearing down with manual reduction

Grade IV: Prolapse that could not be manually reduced

Different surgical techniques have been developed to treat Grade III and IV hemorrhoids. Ligasure vessel sealing system is considered to be an ideal instrument for haemorrhoidectomy [3]. But it ensures short time benefit of reduced intra operative blood loss, operative time and post operative pain as well as resumption of work [4-9].

Thus we aimed to study the efficacy of vessel sealing in the management of grade III & IV hemorrhoids using BEIM Instrument and observed the following parameters:

Complications like pain, retention of urine, bleeding and incontinence.

1. Intra operative complications
2. Hospital stay
3. Cost of surgery

4. Long term complications like stenosis, incontinence and reoccurrence

Safute Technology's 'Biological Impedance Electrical auto-Measurement' (BEIM) concept is considered a smart and advanced technology that is able to produce controlled 'tissues fusion' without causing any carbonation. BEIM (Biological Electronic Impedance Auto-Measurement) technique makes tissue dry and hard without carbonization and it's a rapid curative technique that needs 3-5 seconds for each hemorrhoid. Also there is no bleeding while operation and no change of dressing are needed (Figure 1A,1B). BEIM pincers can smartly auto-measure the impedance of haemorrhoid tissues and then acts as a sealing machine to close the base of the haemorrhoids. The sealed area becomes dry and hard as one entity of '**tissues fusion**'. All the arteries, vein, nerve fibers, tissues collagen and fibers are sealed together. Since the nerve tissues are fused as well, their growth takes place from inside and the hardness takes off with time of healing.



Figure 1a Instrument Panel.



Figure 1b Electronic Forceps, Tweezers & Coagulation Unit.

MATERIALS AND METHODS

Source of data (sample)

Twenty patients with symptomatic Grade III & IV were considered for the study. This prospective study was carried out in Department of General Surgery, Osmania General Hospital, Hyderabad between October 2011 to September 2013.

Method of collection of data

All patients were admitted and investigated. Diagnosis was based upon Digital Rectal Examination and proctoscopy. Surgery was done under spinal anesthesia in lithotomy position for all cases.

Inclusion criteria

Patients with Grade III & IV Hemorrhoids.

Exclusion criteria

Diabetic Patients; Patients with bleeding tendencies; Patients with associated anorectal problems; Patients with history of anorectal operations.

METHODS

All patients were taken up for surgery by BIEM technique. Patient demographics, operative details, number of analgesics, post operative pain, operating time, intra operative blood loss, hospital stay early and delayed complications and time off from work or normal activity was recorded. The patients were regularly followed up at 1, 3, 6, 9, and 12 months after surgery.

RESULTS

This study included 20 patients with III and IV grade hemorrhoids treated by BIEM Technique compared with historic controls (20) who underwent the conventional Milligan and Morgan procedure.

Age/Sex distribution: Age wise distribution showed that most of the patients belonged to the age group 41-50 followed by 31-40 age groups. Male patients were four to five times more commonly affected than female patients in this study.

Symptoms distribution: The distributions of symptoms before surgery were comparable in both groups. Symptoms comprised fresh bleeding related to defecation (range 90-95%), prolapsed (100%), discharge (40%), pain (45-60%), and pruritis (range 30-55%) see (Table 1).

Symptoms Appearance: Duration of symptoms before surgery was comparable in both groups i.e., BIEM group and conventional Milligan & Morgan Haemorrhoidectomy. Between 1-3 months (range 10-15%), 4-6 months (20-25%) 7-9 months (45-50%) 10-12 months (5-15%), more than 12 months (5-10%).

Constipation: Presence or absence of constipation in patients was compared treated by conventional MM Haemorrhoidectomy. 80% suffered constipation in BEIM group and 70% in MM group.

Grade of Hemorrhoids: While 90% of patients suffered from grade III hemorrhoids in BEIM group, 70% suffered from grade III hemorrhoids in MM group and 10% suffered from grade IV hemorrhoids in BEIM group and 30% in MM group had the same (Table 2).

Hemoglobin Concentration: While 30% of patients in BEIM group and 45% in MM group had Hb % less than 12g/dL, 70% of patients in BEIM group and 55% in MM group had Hb more than 12g/dL.

Operating time: Operating time was initially longer in BEIM group but as an experience was gained Operating time was shorter than MM group (Table 3).

Intra Operative Bleeding: Intra operative bleeding was more in MM group when compared to BEIM group (Table 4)

Post Operative complications are listed in the (Table 5). While 75% of patients in MM group suffered from pain post operatively when compared to 35% in BEIM group. Urinary retention was present in 20% of patients in MM group. Post operative bleeding was present in 35% of MM group. Discharge was present in 50% of MM group when compared to 10% of patients in BEIM group. Infection occurred in 20% of patients in MM group while only 10% developed infection in BEIM group.

Table 1: Symptoms before surgery in BEIM and MM groups.

Complaints	BEIM		MM	
	No.	%	No.	%
Bleeding	19	95	18	90
Prolapse	20	100	20	100
Discharge	8	40	8	40
Pain	12	60	9	45
Pruritis	6	30	11	55

Table 2: Grade of hemorrhoids in patients treated by BEIM Haemorrhoidectomy and Conventional MM Hemorrhoidectomy.

Grade	BEIM		MM	
	No.	%	No.	%
III	18	90	14	70
IV	2	10	6	30

Table 3: Operating time in patients treated by BIEM technique and conventional MM hemorrhoidectomy.

Operating time (minutes)	BEIM		MM	
	No.	%	No.	%
<30 mins	14	70	4	20
>30 mins	6	30	16	80

Table 4: Intra operative bleeding in patients treated by BEIM technique and Conventional MM hemorrhoidectomy.

Intraoperative bleeding	BEIM		MM	
	No.	%	No.	%
Bleeding	1	5	12	60

Table 5: Post operative complications in patients treated by BEIM technique and MM hemorrhoidectomy.

Post Operative Complications	BEIM		MM	
	No.	%	No.	%
Pain	7	35	15	75
Urinary Retention	1	5	4	20
Bleeding	0	0	7	35
Discharge	2	10	10	50
Infection	2	10	4	20

Complications: Regarding intraoperative bleeding, in MM technique, it is around 5 ml to 7 ml and post operative bleeding was 2 ml which does not require blood transfusion or surgical reintervention. On the other side BEIM technique involved 2 to 3 ml intraoperative bleeding and post operative bleeding 1 to 2 ml which also does not require blood transfusion or surgical reintervention.

The post operative infection is usually E. coli infection which subsides with a course of CIPROFLAXACIN 500 mg twice daily for one week.

Urinary retention of up to 100 ml was observed that is usually because of pain but not due to any other complication. Once pain killers are used and the pain subsided, patients passed urine without any catheterization

Hospital stay: While 76% of patients in B.I.E.M group were discharged after 3 days only 44% were discharged in MM group, 48% of patients in MM group had to stay up to 6 days while only 24% of them stayed till 6 days and 8% of patients in MM group had to stay more than 6 days in the hospital (Table 6).

DISCUSSION

Hemorrhoids are one of the most frequent anorectal disorders encountered in clinical practice. They are most common cause of bleeding per rectum and are responsible for considerable patient suffering and disability. Bleeding from first and second hemorrhoids often improves with addition of dietary fiber, stool softeners, increased fluid intake, and avoidance of straining. Persistent bleeding from first, second, and selected third degree hemorrhoids may be treated by rubber band ligation [10]. Surgical hemorrhoidectomy is generally indicated for grade III and IV hemorrhoids [11].

Table 6: Duration of hospital stay in patients treated by BEIM technique and conventional MM hemorrhoidectomy.

Postoperative hospital stay (days)	BEIM		MM	
	No.	%	No.	%
1-3 days	19	95	11	55
4-6 days	1	5	7	35
>6 days	-	-	2	10

The obvious disadvantage of surgical hemorrhoidectomy is the postoperative pain resulting from the surgical defect in the sensitive perianal skin and anoderm. Much of this pain may arise from the thermal injury from the use of electrocautery or laser.

CONCLUSION

A prospective study was undertaken to evaluate the advantages and disadvantages of hemorrhoidectomy with BEIM technique verses conventional MM procedure for surgical treatment of grade III and IV hemorrhoids. The prevalence of anemia in both groups was comparable and ranged between 20 to 25% of patients. The distribution of symptoms before surgery was also comparable without significant difference. Symptoms were fresh bleeding related to defecation, prolapsed, pruritis, pain, and discharge. Post operative evaluations reveal:

1. The degree of pain was higher in the MM group than that of the BEIM group.

2. Intraoperative bleeding was more frequent in the MM group. This indicated that BEIM hemorrhoidectomy may be suitable for anemic patients and patients with coagulation disorders.

3. Minor postoperative bleeding that did not necessitate surgical interference was also more encountered in the MM group than BEIM group within 7 postoperative days.

4. Urinary retention was more frequent in the MM group than in BEIM group within the first postoperative week. Urinary catheterization was not needed in any of the cases.

5. The prevalence of postoperative discharge was higher in MM group when compared to the BEIM group.

6. Duration of postoperative hospital stay was prolonged in the MM group than BEIM group as only 55% in MM group were discharged at three days when compared to 95% in BEIM group

7. Long term complications with 3 to 6 months postoperatively in both groups revealed the absence of anal stenosis, acute anal fissure, fecal incontinence and recurrence however, further follow up is needed.

8. BEIM hemorrhoidectomy is more expensive than conventional MM hemorrhoidectomy. Although the former operation had significant improved outcomes after surgery, it also had less post operative stay, thus providing significant financial benefits to justify the additional expenses.

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