

## Original Research Article

# Plication: an innovative method of treating piles

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**Received:** 15 September 2019

**Revised:** 06 October 2019

**Accepted:** 07 October 2019

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### ABSTRACT

**Background:** The cause of haemorrhoids remains unknown. Factors contributing to haemorrhoids are constipation, prolonged squatting, pregnancy, aging, heredity, portal hypertension, abdominal tumour etc.

**Methods:** This prospective study was carried out in department of surgery, M.K.C.G MCH, Berhampur, Odisha, India from 01<sup>st</sup> August 1995 to 31<sup>st</sup> July 2017. Patients from both sex and different age groups having haemorrhoids were included. Patients with piles secondary to anorectal tumours, prolapsed and thrombosed piles, anorectal pathology like fissure were excluded from study. Preoperative, intraoperative interventions and postoperative care were carried out according to laid procedure described below.

**Results:** Total 1014 patients of piles were selected for plication and conventional haemorrhoidectomy and most of them were between 31-50 years of age while 362 cases underwent plication, rest 346 cases were treated with haemorrhoidectomy. All patients in this study had bleeding per rectum as the main symptom. Out of 507 patients which has been examined for plication, 272 (53.65%) had 2<sup>nd</sup> degree, 235 (46.35%) had 3<sup>rd</sup> degree piles. Results of plication of piles are satisfactory and only 4% patients had pain for which long term analgesics were given.

**Conclusions:** Treatment of haemorrhoids is well debated topic and various methods are being used by surgeons all over world. Plication of piles appears to have significant advantages over conventional methods in terms of patient comfort, duration of stay in hospital and incidence of complications. Literature on this subject is briefly reviewed.

**Keywords:** Piles, Haemorrhoids, Plication of piles

### INTRODUCTION

Haemorrhoids have been an affliction of mankind from the dawn of the history affecting young and old, rich and poor alike. The subject is as old as medical history and is among the first condition mentioned in the medical history as contributing to human discomfort. There is an interesting note in the history of haemorrhoids.

Historians say that a severe case of prolapsed haemorrhoids kept Napoleon off his horse at Waterloo, delaying the battle and lose him the war. Haemorrhoids have figured in another war, doctors have fought for years over exactly what they and how they are caused.

Internal haemorrhoids (Greek: haima=blood, rhoos=flowing; synonym: piles, Latin: pila=a ball) are symptomatic anal cushions and characteristically lie in the 3, 7 and 11 o'clock positions (with the patient in the lithotomy position). The prevalence of haemorrhoids when patients are assessed proctoscopically far outweighs the prevalence of symptoms, and the term should only be used when patients have symptoms referable to them.<sup>1,2</sup>

It is difficult to obtain idea of incidence of haemorrhoids. Turell stated that 70% population suffers from haemorrhoids and 40% needs surgical treatment. Over the age of 50 year 50% patients have some degree of haemorrhoidal problem. The incidence of haemorrhoids increases with age. However, the disease is by no means

confined to older individual and haemorrhoids are encountered in people of all ages including young children. Males seem to be affected 2-3 times as frequently as females. Thus, in normal people it would be acceptable to say that everyone has piles at some stage. The cause of haemorrhoids remains unknown. Numerous factors contribute to haemorrhoidal diseases such as heredity, anatomical features, nutrition, occupation, climate, psychic factors, and senility, endocrine changes, irritation from drugs or food, infection, increased intraabdominal pressure, constipation and prolonged squatting. Basic of all these factors is the engorgement and subsequent prolapse of the enlarged anal cushion.<sup>3,4</sup>

There are various classifications of haemorrhoids according to anatomical position and severity of disease and symptoms. In great majority of cases there are three main piles which occupy well-defined position. Two are present on the right side in anal canal and are termed as right anterior and right posterior and the third on the left side is the left lateral pile. Additional haemorrhoids may be present between these piles termed as secondary piles. Haemorrhoids may be also considered external or internal; the diagnosis is based on the history, physical examination and proctoscopy.

External haemorrhoids are covered with anoderm and are distal to the pectinate line; they may swell causing discomfort and difficult hygiene, but causes severe pain only if actually thrombosed. Internal haemorrhoids cause painless, bright red bleeding or prolapse associated with defecation. The treatment of haemorrhoids is as old as the age of man and many different treatments have been described, none of which is entirely satisfactory.

The treatment modalities are as follows.

#### ***Non-operative or conservative management***

- High fibre diet.
- Hot sitz bath and warm soaks.

#### ***Minor surgical procedure***

- Sclerosant therapy.
- Infra-red coagulation.
- Rubber band ligation.
- Plication.
- Cryosurgery.

#### ***Haemorrhoidectomy***

- Classical surgical.
- Laser.

The treatment of haemorrhoids depends upon the severity of symptoms, skill and expertise of surgeon, availability of instrument and affordability of patient. The first- and second-degree haemorrhoids can be treated by conservative or minor surgical procedure whereas the

third and fourth degree always requires surgical treatment like haemorrhoidectomy.

Plication of piles aims at answering a simple, safe but an effective method of surgical treatment of haemorrhoidal disease that suits second and third degree of symptomatic haemorrhoids; in addition to establish a non-expensive method.

The treatment of haemorrhoids has been tried by different method since human race came into existence. But most of the method involve prolonged hospitalisation, regional or general anaesthesia and/or involvement of sophisticated instruments. Thus, many people with haemorrhoids avoid surgeons and surgery till today.<sup>5</sup> To overcome the difficulties in conventional methods, technique plication is described which appears to have advantages over conventional method in terms of ease of execution and patient comfort.

#### ***Objective***

The objective of the study was to study the efficacy and safety of plication method in the treatment of haemorrhoids.

#### **METHODS**

##### ***Study design***

A prospective study.

##### ***Study place***

The study was conducted at Department of General Surgery, M.K.C.G MCH, Berhampur, Odisha, India.

##### ***Period of study***

The study was conducted from 01<sup>st</sup> Aug 1995 to 31<sup>st</sup> July 2017.

##### ***Selection criteria of the patients***

##### ***Inclusion criteria***

Patients from both sex and different age groups having haemorrhoids were included.

##### ***Exclusion criteria***

Patients with secondary, tertiary- prolapsed, thrombosed piles and piles secondary to anorectal tumour, anorectal pathology like fissure were excluded from study.

Total 1014 patients were divided equally in plication and conventional method, out of which 317 (62.52%) were males and 190 (37.48%) were females in plication

method and 319 (62.92%) were males and 188 (37.08%) were females in conventional method.

Bleeding per anum, painless in nature was the predominant presenting feature in about 827 (81.56%) of the patients. Perianal itching with constipation and occasional soiling were clinically evident in about 463 (45.67%) of the cases. All the patients were subjected to proctoscopy before including them for the study.

The study was approved by the institutional ethical committee.

The patients were equally divided into two groups and the allocation of patients to both the groups was done randomly. The first group was treated with the conventional method. Post-operative events like pain, bowel action, complications, hospital stay, anal function, long term complications were compared between conventional and plication method. Both the groups compared using Chi-square method statistically and p value <0.05 considered significant.

#### **Pre-operative preparation**

The patients were asked to take laxative in the night before operation. Again, a proctoclysis enema was given 2 hours before the procedure to ensure a better visualization of the anal canal. Shaving of the perineum was done. Tetanus prophylaxis was taken care.

#### **The technique**

The major advantage of this technique is that it can be undertaken in all forms of anaesthesia. Even patients unsuitable for general or spinal anaesthesia can be easily taken up under local anaesthesia.

In the operation theatre, the patient is kept in the lithotomy position. After the administration of appropriate anaesthesia, the anus is dilated by passing three fingers. With the help of Allis forceps, skin tags corresponding to the three haemorrhoids are caught and are pulled apart. Then with good illumination each of the haemorrhoid is lifted with Babcock's forceps and is dealt with the help of 1-0 polyglactin (vicryl) and curved atraumatic needle, the sutures are given from below upwards. These sutures are given as continuous locking sutures. The needle and the catgut pass beneath the mucous membrane and occlude the superior haemorrhoidal vessels while those at the bottom occlude the connection between the external and internal haemorrhoidal plexus. Usually there is no bleeding with this technique. But if at all little bleeding occurs, that can be easily be stopped by local pressure with a gauze piece. All the haemorrhoids can be taken up at one sitting without any problem. A small piece of gauze soaked with 2% xylocaine jelly is given in the anus as a dressing. Packing is never given as in conventional method. This

habit reduces the postoperative pain and makes the bowel movement easier and earlier.

This procedure takes very short time i.e., about 15-20 minutes in comparison to longer operating time in conventional methods.

#### **Postoperative management**

Digital rectal examination and proctoscopic evaluation was carried out as soon as patients were able to tolerate it post-operatively. In this procedure no postoperative management was required. Once the effect of anaesthesia was over they were allowed to take full diet. All patients were given lactulose 2 teaspoon in the night and first bowel action usually followed on the first postoperative day. There was no need of postoperative dressing, hot sitz bath, enema and digital dilatation. Oral antibiotics (ofloxacin and ornidazole) were given prophylactically for 5 days to prevent abscess. Routine analgesics were not prescribed.

#### **Follow up**

Cases have been followed up for 2 months in the present study.

## **RESULTS**

#### **Age incidence**

Most of the patients were between 31-50 years of age (71.4%) in plication method and (68.24%). Youngest patient in the series was 21 years old and the oldest was 73 years.

**Table 1: Distribution of study population according to the age group.**

| Age (in years) | Plication method | Conventional method |
|----------------|------------------|---------------------|
|                | N (%)            | N (%)               |
| 21-30          | 89 (17.55)       | 84 (16.57)          |
| 31-40          | 187 (36.89)      | 177 (34.91)         |
| 41-50          | 175 (34.51)      | 169 (33.33)         |
| 51-60          | 38 (7.50)        | 63 (12.42)          |
| >60            | 18 (3.55)        | 14 (2.77)           |

**Table 2: Distribution of study population according to gender.**

| Sex    | Plication method | Conventional method |
|--------|------------------|---------------------|
|        | N (%)            | N (%)               |
| Male   | 317 (62.52)      | 319 (62.92)         |
| Female | 190 (37.48)      | 188 (37.08)         |
| Total  | 507              | 507                 |

**Sex incidence**

Males were predominantly affected as compared to females.

The post-operative events in either group were tabulated which are as follows.

**Post-operative pain**

The relief of post-operative pain was rapid in the plication and thus most of the patients could home next

day. This was never seen with conventional method where patients were treated with moderate pain upto 4<sup>th</sup> post-operative day.

**Table 3: Distribution of study population according to degree of haemorrhoids.**

| Degree of haemorrhoids | Plication method | Conventional method |
|------------------------|------------------|---------------------|
|                        | N (%)            | N (%)               |
| <b>II degree</b>       | 272 (53.65)      | 269 (53.06)         |
| <b>III degree</b>      | 235 (46.35)      | 238 (46.94)         |

**Table 4: Post-operative pain.**

| Method                        | By 24 hours | By 48 hours | By 72 hours | >72 hours   |
|-------------------------------|-------------|-------------|-------------|-------------|
|                               | N (%)       | N (%)       | N (%)       | N (%)       |
| <b>By plication</b>           | 367 (72.39) | 76 (15.0)   | 41 (8.08)   | 23 (4.53)   |
| <b>By conventional method</b> | 47 (9.27)   | 54 (10.65)  | 77 (15.18)  | 329 (64.90) |

$\chi^2=528.04, p<0.0001.$

**Table 5: Post-operative bowel action (24 hours).**

| Method              | Painless    | Painful without blood | Painful with blood |
|---------------------|-------------|-----------------------|--------------------|
|                     | N (%)       | N (%)                 | N (%)              |
| <b>Plication</b>    | 416 (82.06) | 66 (13.01)            | 25 (4.93)          |
| <b>Conventional</b> | 16 (3.16)   | 144 (28.40)           | 347 (68.44)        |

$\chi^2=685.04, p<0.0001.$

**Table 6: Post-operative complications.**

| Method              | Reactionary haemorrhage | Secondary haemorrhage | Abscess   | Fissure   | No complication |
|---------------------|-------------------------|-----------------------|-----------|-----------|-----------------|
|                     | N (%)                   | N (%)                 | N (%)     | N (%)     | N (%)           |
| <b>Plication</b>    | 05 (0.98)               | 02 (0.39)             | 00        | 00        | 500 (98.6)      |
| <b>Conventional</b> | 49 (9.66)               | 19 (3.74)             | 14 (2.76) | 07 (1.38) | 418 (82.4)      |

$\chi^2=77.36, p<0.0001.$

**Post-operative bowel action**

Most of the patients with the new method had a painless post-operative bowel movement whereas it was painful with bleeding in cases with the conventional method. We allowed liquid diet to patients six hours after the procedure and cremaffin was given on the night of operation. Thus, many patients could pass motion within 24 hours of operation. This is facilitated by the practice of non-usage of anal pack post-operatively.

**Post-operative complications**

The plication technique seems to have no complications whereas there were complications following the conventional method.

**Hospital stay**

The short hospital stay allows this technique to be practised as a day care procedure. The conventional

method requires prolonged hospital stay which is expensive.

**Table 7: Hospital stay.**

| Method              | Hospital stay | Time of work |
|---------------------|---------------|--------------|
| <b>Plication</b>    | 1-2 days      | 5-7 days     |
| <b>Conventional</b> | 5-9 days      | 14-26 days   |

**Post-operative anal function**

Post-operative anal function is highly satisfactory in plication method.

**Long term results**

Long term complications were seen in cases in the form of recurrent bleeding. However, it was very minimal (11 cases) in compared to 39 cases in conventional methods. These cases responded to conservative treatment. Only 12 cases of the conventional group had to be re-operated.

**Table 8: Post-operative anal function.**

| Method              | Incontinence to flatus | Incontinence to faeces and flatus | Anal stenosis | Normal     |
|---------------------|------------------------|-----------------------------------|---------------|------------|
|                     | N (%)                  | N (%)                             | N (%)         | N (%)      |
| <b>Plication</b>    | 15 (2.95)              | 00                                | 00            | 492 (97)   |
| <b>Conventional</b> | 33 (6.50)              | 18 (3.55)                         | 09 (1.77)     | 447 (88.6) |

$\chi^2=29.15$ ,  $p<0.0001$ .

Incontinence to flatus, faeces, and stenosis and recurrence of other symptoms were not seen with plication method. However, the conventional group had 35 cases of

incontinence to flatus and faeces and 12 cases of stenosis. Symptoms recurred in 37 cases out of which 12 had to be operated as stated earlier.

**Table 9: Long term complications.**

| Method              | Bleeding  | Incontinence to faeces/flatus | Anal stenosis | Recurrence | No complication |
|---------------------|-----------|-------------------------------|---------------|------------|-----------------|
|                     | N (%)     | N (%)                         | N (%)         | N (%)      | N (%)           |
| <b>Plication</b>    | 11 (2.16) | 00                            | 00            | 00         | 496 (97.8)      |
| <b>Conventional</b> | 39 (7.69) | 35 (6.90)                     | 12 (2.36)     | 37 (7.29)  | 384 (95.4)      |

$\chi^2=107.86$ ,  $p<0.0001$ .

Regular proctoscopy revealed that immediately after plication, the piles masses became bigger and deeper in colour and look congested upto the 7<sup>th</sup> day after which there was shrinkage. At about the end of 8<sup>th</sup> week, when all the sutures were absorbed the plicated piles masses look segmented and shrunk. At 12<sup>th</sup> to 15<sup>th</sup> week we found that the shrunk piles masses were gradually replaced by fibrous bands.

El-Meguid described a pile suture method, similar to ours and used chromic catgut as suture material, he practised three interrupted sutures whereas we did continuous locking sutures with equal results.<sup>6,7</sup>

## DISCUSSION

From the above study we found out that 708 number of patients (69.82%) who underwent piles procedure (both plication and conventional) were from age group 31-50 years. 636 number of patients were male (62.72%). In our study 484 patients (95.47%) got relieved from postoperative pain by 72 hours, whereas in conventional method only 178 patients (35.10%) got relief from postoperative pain by 72 hours. Dowidar et al, observed that 8.7% of patients had pain in plication of piles whereas, 54.55% had pain in excision and ligation of piles.<sup>9</sup> 416 (82.06%) number of patients had painless bowel movements, 66 (13.01%) patients had painful bowel movements with blood in stool, 25 (4.93%) patients had painful bowel movements without blood in stool after plication method whereas 16 (3.16%) number of patients had painless bowel movements, 144 (28.40%) patients had painful bowel movements with blood in stool, 347 (68.44%) patients had painful bowel movements without blood in stool after conventional method. In Patnaik's, study 88% patients had painless first bowel action whereas, only 2% patients who had undertaken classical haemorrhoidectomy. Dowidar et al

observed first bowel action in plication of piles on first postoperative day whereas on 2nd postoperative day in excision and ligation of piles in most of the patients.<sup>9,12</sup> During plication intra and postoperative bleeding occurred in (1.37%) in contrast to conventional method in which (13.4%) cases were having bleeding. Similar finding as that of present study was observed by Awojobi, Patnaik and Ezzeldeen in the study of plication.<sup>10-12</sup> All the patients who underwent plication stayed in the hospital for 1-2 days, and were able to carry out their daily work after 5-7 days but in conventional method in my study the patient had to stay in the hospital for 5-9 days, and were able to carry out their daily work after 14-26 days. In Farag's, study on plication of piles, he observed that the mean stay in the hospital was 3.6 days against 7.2 days who had undergone classical haemorrhoidectomy. In Patnaik's, study all patients were allowed to go home on the same day and time off work was 1 day.<sup>7,12</sup> After plication, 492 (97%) patients had normal anal function, only 15 (2.95%) had incontinence to flatus and none of them had incontinence to faeces and anal stenosis while after conventional method 447 (88.6%) patients had normal anal function, 33 (6.50%) had incontinence to flatus, 18 (3.55%) had incontinence to faeces and 09 (1.77%) had anal stenosis. 496 (97.8%) patients had no long-term complications, only 11 (2.16%) patients had long-term recurrent bleeding, no patients had incontinence to faeces/flatus, anal continence, recurrence after plication whereas after conventional method 384 (95.4%) patients had no long-term complications, 39 (7.69%) patients had recurrent bleeding, 35 (6.90%) had incontinence to faeces/flatus, 12 (2.36%) had anal stenosis, 37 (7.29%) had recurrence as long-term complications. In Farag's, study and Dowidar et al, study on plication of piles no long-term complication was observed for a year. Patnaik, in his study on plication of piles had bleeding in 0.5% patient on long-term follow-

up for a year whereas; in haemorrhoidectomy it was in 33% of patients.<sup>7,9,12</sup>

## CONCLUSION

From the above discussion it is quite clear that this is not an absolute painless procedure in comparison to the conventional methods as the skin, nor the sphincter is dealt with. Post-operative problems such as bleeding, incontinence, anal stenosis or recurrence of symptoms were not found in the plication method. This technique requires a very short hospital stay and very short length of time of work. Because of these executions, and safety in the hands of relatively inexperienced, this can strongly be recommended for rural India where sophisticated facilities are usually not adequate. Plication of piles can be performed in 2nd and 3rd degree piles, this procedure takes very short time without the need of any costly instruments and can be done on elderly patients, so the expenditure by the patient is very less and is a suitable technique for developing and under developed countries.

*Funding: No funding sources*

*Conflict of interest: None declared*

*Ethical approval: The study was approved by the Institutional Ethics Committee*

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**Cite this article as:** Pattanayak S, Kumar M, Patro SK, Behera MK. Plication: an innovative method of treating piles. Int Surg J 2019;6:4056-61.