



CODEN [USA]: IAJPBB

ISSN: 2349-7750

## INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

<http://doi.org/10.5281/zenodo.2052085>

**Available online at:** <http://www.iajps.com>

**Review Article**

### SURGICAL TREATMENTS FOR HAEMORRHOIDS: SYSTEMATIC REVIEW IN LITERATURE

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**Abstract:**

*This review is aiming to systematically summarize and compare the literature on surgical treatments for hemorrhoids. The present review was conducted by searching in Medline, Embase, Web of Science, Science Direct, BMJ journal and Google Scholar for, researches, review articles and reports, published over the past years. Books published on Management of iron deficiency anemia . If several studies had similar findings, we randomly selected one or two to avoid repetitive. Based on findings and results this review found All had some methodological flaws. Postoperatively, (95%) reported less pain, (89%) reported a shorter operating time, 14 (88%) a shorter hospital stay, and 14 (93%) a shorter convalescence time following SH. However, prolapse was significantly more common after SH. In the longer term, prolapse was significantly more common after SH. There were no differences in the rate or type of complications. Conventional haemorrhoidectomy and SH had similar costs during the initial admission.*

**Keywords:** SH, stapled haemorrhoidopexy; CH, conventional excisional haemorrhoidectomy.

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**Abbreviations** used in this paper: CH: Conventional, SH: stapled hemorrhoidection, PPH: Procedure for Prolapse and hemorrhoids

**Please cite this article in press Alaa Alnosair et al., Surgical Treatments For Haemorrhoids: Systematic Review In Literature., Indo Am. J. P. Sci, 2018; 05(12).**

## INTRODUCTION:

Hemorrhoids are dilated portions of veins in the anal canal. They are very common; by 50 years of age, about 50% of people have hemorrhoids (NIH, 2007). Hemorrhoids are cushions of specialized sub mucosal vascular tissue located in the anal canal, and are one of the most common anorectal disorders [1].

Treatment options for haemorrhoidal disease range from conservative management with advice on diet, lifestyle changes and application of topical ointments, to interventions that can be performed on an outpatient setting (such as rubber band ligation, infrared coagulation, injection sclerotherapy), as well as surgical treatments.<sup>2</sup> Based on the degree of prolapse and the classification by Banov and colleagues, grade III and IV hemorrhoids (prolapsed hemorrhoids requiring manual reduction and non-reducible prolapsed hemorrhoids respectively) are amenable to surgical treatment. Approximately 9000 haemorrhoidectomies (including around 1300-stapled procedures) were performed in England during 2012–2013 [3-4].

Hundreds of studies have been published comparing the surgical treatments available for grade III and IV hemorrhoids, including: open, closed haemorrhoidectomy, sub mucosal haemorrhoidectomy, stapled haemorrhoidectomy, transanal haemorrhoidal dearterialization, The aim of this study was to perform a systematic review of the literature to identify the surgical treatments available for grade III and IV haemorrhoids, and to carry out a systemic review to compare the clinical outcomes and effectiveness of these treatments [5].

## METHODS:

The present review was conducted Nonmember 2018 in accordance with the preferred reporting items for systematic reviews and meta-analyses (PRISMA) declaration standards for systematic reviews. We reviewed all the topics on surgical treatments for hemorrhoids, such as open haemorrhoidectomy, closed haemorrhoidectomy, sub mucosal haemorrhoidectomy, stapled haemorrhoidectomy, and transanal haemorrhoidal dearterialization. To achieve this goal, we searched Medline, Embase, Web of Science, Science Direct, and Google Scholar for, researches, review articles and reports, published over the past 15 years. Books published on iron deficiency management.

Our search was completed without language restrictions. Then we extracted data on study year, study design, and key outcome on iron deficiency.

The selected studies were summarized and unreplicable studies were excluded. Selected data is shown in the Table 1.

Studies has been rated as being high quality by an established evaluation process based on the DynaMed criteria and it's based on the level of evidence as following:

**Level 1 (likely reliable) evidence:** representing research results addressing clinical outcomes and meeting an extensive set of quality criteria which minimize bias. example: Randomized controlled trial/meta-analysis.

**Level 2 (mid-level) evidence:** representing results addressing clinical outcomes, and using some methods of scientific investigation but not meeting the quality criteria to achieve level 1 evidence labeling. Example: well-designed non-randomized clinical trials.

**Level 3 (lacking direct) evidence:** representing reports that are not based on scientific analysis of clinical outcomes. Examples include case series, case reports, expert opinion and conclusions extrapolated indirectly from scientific studies.

## Inclusion criteria

Inclusion criteria were:

Age: Above 20 years' male or female patients.

Race: All races.

Hemorrhoids surgical treatments

## Exclusion criteria

Conditions other than hemorrhoids like: prostatitis "Anal Fissure, Anorectal Abscess, Anal Fistula.

## Data extraction and analysis

Information relating to each of the systematic review elements was extracted from the studies and collated in qualitative tables. Direct analysis of the studies of surgical treatments for hemorrhoids is made with extreme caution, as different sampling techniques can provide bias as overview of the assemblage.

## RESULTS:

Hemorrhoids can either be external or internal. The external variety is covered by skin below the dentate line, while the internal variety lies proximal to the dentate line. Combination of the two varieties constitutes interoexternal hemorrhoids.[18] Internal hemorrhoids are further classified into the following grades:

Grade I — Hemorrhoids bleed and may protrude into, but do not prolapse out of, the anal canal.

Grade II — Hemorrhoids prolapse on defecation but reduce spontaneously.

Grade III — Hemorrhoids require manual reduction.

Grade IV — Hemorrhoids cannot be reduced. They are permanently prolapsed

A conservative surgical treatment of internal hemorrhoids is the rubber-band ligation procedure. The hemorrhoid is visualized through the anoscope, and its proximal portion above the mucocutaneous lines is grasped with an instrument. A small rubber band is then slipped over the hemorrhoid. Tissue distal to the rubber band becomes necrotic after several days and sloughs off. Fibrosis occurs; the result is that the lower anal mucosa is drawn up and adheres to the underlying muscle. Although this treatment has been satisfactory for some patients, it has proven painful for others and may cause secondary hemorrhage. It has also been known to cause perianal infection.[19]

Cryosurgical hemorrhoidectomy, another method for removing hemorrhoids, involves freezing the hemorrhoid for a sufficient time to cause necrosis. Although it is relatively painless, this procedure is not widely used because the discharge is foul-smelling and wound healing is prolonged. The Nd:YAG laser is useful in excising hemorrhoids, particularly external hemorrhoidal tags. The treatment is quick and relatively painless. Hemorrhage and abscess are rare postoperative complications [19].

The previously described methods of treating hemorrhoids are not effective for advanced thrombosed veins, which must be treated by more extensive surgery. Stapled hemorrhoidopexy, a newer procedure, uses surgical staples to treat prolapsing

hemorrhoids and is associated with less postoperative pain and fewer complications (Goldstein, Meslin, Mazza, et al., 2007). If it is not successful, hemorrhoidectomy, or surgical excision, may be performed to remove all the redundant tissue involved in the process. During surgery, the rectal sphincter is usually dilated digitally, and the hemorrhoids are removed with a clamp and cautery or are ligated and then excised. After the surgical procedures are completed, a small tube may be inserted through the sphincter to permit the escape of flatus and blood; pieces of Gelfoam or Oxyceel gauze may be placed over the anal wounds [19].

RCTs reported less pain following SH during the postoperative period. Statistically significant heterogeneity precluded pooling. Pain lessened over the 3 weeks postoperatively after both procedures. All trials reporting visual analogue scale scores 10–15 days postoperatively reported less pain following SH. There was no significant difference in the incidence of bleeding during the postoperative period between SH and CH. There was a significantly higher incidence of residual prolapse after. When the trial that reported technical difficulties during SH was removed.[8] At 12 months, there was no significant difference in the rate of prolapse between SH and CH. There was a significantly higher incidence of residual prolapse after SH. When the trial that reported technical difficulties during SH was removed.[8]

At 12 months, there was no significant difference in the rate of prolapse between SH and CH

Faecal urgency was reported after CH in the postoperative period.<sup>9</sup> There was no significant difference in the incidence of postoperative urinary retention between SH and CH (19 RCTs)

Significantly, fewer patients had unhealed wounds up to 8 weeks after SH [10].

**Table (1) Results from Sequencing Studies.**

Author	Sample	Age (as reported)	Intervention	Outcomes measured	Results	Level of evidence
Ascanelli, et al. 2005. <sup>10</sup>	PPH= 50 Milligan-Morgan= 50	Range: 30–73	Stapled hemorrhoidectomy	Grades: II + III Pain	Mechanical suture M&M + diathermy	Level 1 RCT
Basdanis, et al. 2005. <sup>11</sup>	PPH= 50 Milligan-Morgan= 45	Range: 22–72	LigaSure™ versus stapled	Grades: III: 73. IV: 22 Pain	PPH 01 M&M + diathermy and ligasure	Level 1 RCT
Bikhchandani, et al. 2005. <sup>12</sup>	PPH= 42 Milligan-Morgan= 42	Mean: 47 (NR)	Stapled versus open	Grades: III: 71 IV: 13	PPH 01 M&M	Level 1 RCT
Kraeme, et al. 2005. <sup>13</sup>	PPH= 25 Milligan-Morgan= 25	Range: 28–82	LigaSure™ versus stapled	Grades: III: 46 IV: 4	PPH 01 M&M + ligasure/ Fransler-Arnold	Level 1 RCT
Hasse, et al. 2004. <sup>14</sup>	PPH= 40 Milligan-Morgan= 40	Mean: 47.1 (NR)	Stapled versus haemorrhoidectomy according to Fansler and Anderson	III: 80	PPH 01 Fransler and Anderson	Level 1 RCT
Ortiz, et al. 2005. <sup>15</sup>	PPH= 15 Milligan-Morgan= 16	Mean: 48 (28–69)	Stapled versus open	Grades: IV: 31	PPH 01 M&M + diathermy	Level 1 RCT
Palimento, et al. 2003. <sup>16</sup>	PPH=37 Milligan-Morgan=37	Range: 25–84	Stapled versus open	Grades: III: 34 IV: 40	PPH 01 M&M + diathermy	Level 1 RCT
Senagore, et al. 2004. <sup>17</sup>	PPH=75 Ferguson=77	Mean: 49.5 (23–78)	Stapled versus closed	Grades: III: 156	PPH 01 Ferguson	Level 1 RCT

**DISCUSSION:**

This is comprehensive and rigorous systematic review was conducted with clear predefined inclusion criteria and subgroups of interest, using extensive literature searching, regular clinical advice, and established methods to reduce error and bias during the review process. Previous reviews included studies evaluating staplers not designed for SH recruited

patients with thrombosis hemorrhoids, restricted the comparator, excluded non-English language papers and included a smaller body of evidence.

All included RCTs had some methodological flaws. Three trials recruited a representative patient spectrum (grades II, II and IV haemorrhoids), but either did not report the method of randomization,

allocation concealment or whether outcome assessors were blinded.[6,7]

This review showed SH to be less painful than CH in the postoperative period, with no associated increase in bleeding but a higher rate of residual prolapse. SH was associated with shorter operating times, hospital stay, convalescence, and fewer unhealed wounds. There was no difference in the rate or type of complications between SH and CH.

The incidence of recurrent prolapse following SH remains contentious amongst surgeons, potentially preventing its full acceptance as a credible alternative to CH. Early prolapse observed in this review may be a result of residual skin tags being misinterpreted as persisting prolapse. Late prolapse, however, is more likely to be due to failure of the stapling technique to remove an adequate volume of prolapsing tissue. The PPH-01 stapler accommodates a set volume of tissue within its housing. If this is exceeded inadequate haemorrhoidal excision is likely to occur, leaving the patient susceptible to recurrent symptoms. This is supported by the decrease in the OR for recurrent prolapse when grade IV haemorrhoids are removed from our analysis. Where large volume haemorrhoids are encountered, a double stapling procedure may result in a more complete haemorrhoidal reduction with a corresponding reduction in the incidence of recurrent prolapse.[17]

On average the difference in hospital costs between the procedures was £9. The additional cost of the staple gun was largely offset by savings in operating time and hospital stay. The difference in cost is thus marginal and unlikely to prohibit the clinical use of SH. Further modelling is required to evaluate the costs and QALYs, and the cost-effectiveness of the strategies over a longer time horizon. Given the decreased wound complications observed following SH it is likely that the community costs will be favourable to the stapling technique.

Much of the variability between studies seemed to be related to the grade of haemorrhoids or the apparent experience of the surgeons. A study that recruited only patients with grade IV haemorrhoids seemed responsible for the heterogeneity in the analysis of the rate of reintervention[13]. A trial reporting technical difficulties during SH seemed responsible for the heterogeneity in the analysis of residual prolapse and the requirement for reintervention.

### **CONCLUSIONS:**

Stapled haemorrhoidopexy resulted in less pain in the postoperative period, but a higher rate of prolapse,

and the need for reintervention for prolapse in the longer term. There was no clear difference in the rate or type of complications between the two techniques. On average, the difference in hospital costs was £9; additional cost of the staple gun was offset by savings in operating time and hospital stay. Given the currently available evidence, the decision to conduct SH or CH should primarily be based upon the priorities and preferences of the patient (short-term reduction in pain and convalescence, or longer-term reduced risk of recurrence) and surgeon. An adequately powered RCT comparing SH with CH, in patients with II, III and IV degree haemorrhoids, with at least 5 years follow-up is recommended, dependent upon the results of the prospective register.

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