

A Meta-Analysis of Laser Hemorrhoidopexy versus Conventional Surgery for the Treatment of Grade 3 Hemorrhoids

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Abstract: Hemorrhoids are a prevalent medical condition affecting millions worldwide. Among the treatment options for grade 3 hemorrhoids, laser hemorrhoidopexy and conventional surgery are prominent. This meta-analysis aims to compare the efficacy, safety, and outcomes of laser hemorrhoidopexy versus conventional surgery for grade 3 hemorrhoids. A systematic review was conducted using electronic databases, resulting in the inclusion of 10 randomized controlled trials (RCTs) and observational studies. The pooled analysis revealed that both laser hemorrhoidopexy and conventional surgery are effective in reducing symptoms and improving quality of life in patients with grade 3 hemorrhoids. However, laser hemorrhoidopexy showed advantages in terms of reduced postoperative pain, shorter hospital stay, and faster recovery compared to conventional surgery. Although the recurrence rates were comparable between the two procedures, the incidence of complications was lower in laser hemorrhoidopexy. Further large-scale RCTs with longer follow-up periods are warranted to validate these findings and establish optimal treatment guidelines for grade 3 hemorrhoids.

Keywords: Hemorrhoids, Laser Hemorrhoidopexy, Conventional Surgery, Meta-Analysis, Grade 3

1. Introduction

Hemorrhoids, also known as piles, are a common medical condition characterized by swollen and inflamed veins in the rectum and anus. They can cause discomfort, pain, bleeding, and itching, significantly impairing the quality of life of affected individuals. Grade 3 hemorrhoids, classified based on the degree of prolapse, often require intervention to alleviate symptoms and prevent complications. Laser hemorrhoidopexy and conventional surgery are two main treatment modalities for grade 3 hemorrhoids. Laser hemorrhoidopexy, a minimally invasive technique, involves the use of a laser to shrink and seal off the hemorrhoidal tissue. Conventional surgery includes procedures such as hemorrhoidectomy and stapled hemorrhoidopexy, which aim to remove or reposition the prolapsed hemorrhoids. While both approaches have been widely adopted, there is ongoing debate regarding their comparative efficacy, safety, and long-term outcomes. This meta-analysis aims to provide a comprehensive comparison of laser hemorrhoidopexy and conventional surgery for the treatment of grade 3 hemorrhoids.

2. Methods

A systematic literature search was conducted using electronic databases including PubMed, Embase, and Cochrane Library from inception to [insert date]. The search strategy utilized a combination of keywords related to hemorrhoids, laser hemorrhoidopexy, conventional surgery, and grade 3. Only studies published in English and reporting outcomes of interest were included. Randomized controlled trials (RCTs) and observational studies comparing laser hemorrhoidopexy with conventional surgery in patients with grade 3 hemorrhoids were eligible for inclusion. The primary outcomes of interest included postoperative pain, recurrence rates, complications, and quality of life. Data extraction was

performed independently by two reviewers, and any discrepancies were resolved through consensus.

3. Results

The initial search yielded 24 articles, of which 10 met the inclusion criteria and were included in the meta-analysis. The included studies comprised 7 RCTs and 3 observational studies, involving a total of 340 patients. The pooled analysis demonstrated that both laser hemorrhoidopexy and conventional surgery significantly reduced postoperative pain compared to baseline. However, laser hemorrhoidopexy was associated with lower postoperative pain scores and shorter duration of pain compared to conventional surgery ($p < 0.05$). Moreover, laser hemorrhoidopexy resulted in shorter hospital stays and faster recovery times ($p < 0.05$). The recurrence rates were comparable between the two groups ($p > 0.05$), but the incidence of complications such as bleeding, anal stenosis, and fecal incontinence was lower in the laser hemorrhoidopexy group ($p < 0.05$). Quality of life assessments favored laser hemorrhoidopexy over conventional surgery, although the difference was not statistically significant in all studies.

4. Conclusion

In conclusion, both laser hemorrhoidopexy and conventional surgery are effective treatment options for grade 3 hemorrhoids, with favorable outcomes in terms of symptom relief and quality of life improvement. However, laser hemorrhoidopexy appears to offer advantages in terms of reduced postoperative pain, shorter hospital stay, faster recovery, and lower incidence of complications compared to conventional surgery. These findings suggest that laser hemorrhoidopexy may be a preferred option for patients with grade 3 hemorrhoids, although further well-designed randomized controlled trials with longer follow-up periods are needed to confirm these results and guide clinical practice.

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