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Comparative Analysis of Laser Hemorroidoplasty versus Open Haemorroidectomy

Aseem Trikha[1]

[1]Senior Resident, Department of Surgery, Acharya Shree Bhikshu Government Hospital, Delhi, India.

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ABSTRACT

Background: Hemorrhoidal ailment is one of the commonly occurring diseases of the rectum and the large intestines with the estimated global prevalence between 2.9% to 27.9%, of that approximately 4% are symptomatic. Post hemorrhoidectomy pain is the most common problem related with the surgical methodologies. The present study was conducted to compare the laser hemorroidoplasty versus open surgery. **Methods:** The present prospective comparative study was done amongst 60 subjects, 30 patients were operated with laser method and 30 patients were managed with open surgical technique. The intraoperative and postoperative parameters were also recorded in a tabulated form. All the data obtained was analyzed using SPSS software. Student t test was used for analysis and probability value of less than 0.05 was considered as significant. **Results:** The study enrolled a total of 60 subjects, with 30 in each group. The mean age of subjects in laser group was 34.87+/-3.54 years and in surgical group was 33.76+/-2.89 years. There were 40 males and 20 females in the study. Moderate pain was seen by 7 patients in laser and 15 patients in surgical group. There were only 3 patients in laser group and 10 patients in surgical group with serve pain. **Conclusion:** Laser hemorroidoplasty offers best intraoperative and postoperative outcomes when compared to surgical management.

Keywords: Ailment, Hemorroidoplasty, Laser, Postoperative.

INTRODUCTION

Hemorrhoidal ailment is one of the commonly occurring diseases of the rectum and the large intestines with the estimated global prevalence between 2.9% to 27.9%, of that approximately 4% are symptomatic.[1,2] About, one third of the subjects seek doctor's for advice. Age distribution has shown a peak incidence between 45 and 65 years of age with further decline after the age of 65 years.[3,4] Males are more commonly affected compared to females.[5] Hemorrhoids are thought to be due to the descending displacement Treitz muscle.[6,7] The treatment choices for symptomatic hemorrhoids have been diverse. Measures include conservative management, non-surgical managements with a variety of surgical techniques. The various non-surgical protocols include ligation with rubber band, injection sclerotherapy, cryotherapy, coagulation using infrared, laser therapy and diathermy. These can be performed in outpatient department without anesthesia. These nonsurgical methods are the primary choice for grades one to three hemorrhoids.[8] Post hemorrhoidectomy pain is the most common problem related with the surgical methodologies. The other types of early complications include urinary retention, bleeding and subcutaneous abscess.[9] The long-term complications like anal fissure, anal stenosis, incontinence, fistula and recurrence can also occur.[10,11] The present study was conducted to compare the laser hemorroidoplasty versus open surgery.

Name & Address of Corresponding Author
Dr. Aseem Trikha,
Senior Resident,
Department of Surgery,
Acharya Shree Bhikshu Government Hospital,
Delhi, India.

MATERIALS AND METHODS

The present prospective comparative study was done amongst 60 subjects, 30 patients were operated with laser method and 30 patients were managed with open surgical technique. Patients were assigned into 2 different groups, as per their condition. The study was conducted for a period of 2 years. All the subjects were informed about the study and a written consent was obtained from them in their vernacular language. Ethical committee clearance was obtained from the institutional ethical board. A detailed physical observation and proctoscopy, the laser treatment procedure was done with Biolitec. The patient was kept in the lithotomy position and with a dedicated disposable proctoscope of diameter 23 mm was introduced into the anal canal. Laser shots were given with 980-diode laser in a pulsed manner to decrease the unwanted degeneration of the periarterial normal tissue. The treatment was

conducted as an outpatient procedure. No bowel preparation was needed. Amongst all the patients, 2 enemas were provided 2 hours before the commencement of intervention. Other group of 30 patients were managed with open surgical hemorroidectomy under the local anesthesia. Subjects were discharged after 4 to 12 hours as per their general physical condition and follow up was done for 2 to 6 months for healing and complications assessment. The postoperative pain and the complications amongst both the groups were noted. The intraoperative and postoperative parameters were also recorded in a tabulated form. All the data obtained was analyzed using SPSS software. Student t test was used for analysis and probability value of less than 0.05 was considered as significant.

RESULTS

The study enrolled a total of 60 subjects, with 30 in each group. The mean age of subjects in laser group was 34.87+/-3.54 years and in surgical group was 33.76+/-2.89 years. There were 40 males and 20 females in the study.

[Table 1] shows the comparison between intraoperative and early postoperative outcome. The operating time in laser group was 31.62+/- 3.89 mins compared to 52.86+/-2.98 in surgical group. The mean intraoperative blood loss in laser group was 15.60+/-4.38 and surgical group was 35.87+/-6.53 ml. There was a significant difference in both the variables amongst the groups. The mean hospital stay in laser group was 1.15 and in surgical group was 1.20 days. There was no significant difference between the groups. There was significant difference in the number of days it took for the patients to return to work.

Table 1: Comparison between intraoperative and early postoperative outcome

Variable	Laser group	Surgical group	P value
Operative time	31.62+/-3.89	52.86+/-2.98	<0.05
Blood loss	15.60+/-4.38	35.87+/-6.53	<0.05
Hospital stay	1.15	1.20	>0.05
Return to work	7.69+/-3.24	21.87+/-4.16	<0.05

Table 2: Comparison between postoperative pain score and complications amongst the groups

	Laser group	Surgical group	P value
Postoperative pain			<0.05
Mild (1-3)	20	5	
Moderate (4-6)	7	15	
Severe(7-10)	3	10	
Complications			
Bleeding	0	1	>0.05
Urine retention	0	3	<0.05

[Table 2] shows comparison between postoperative pain score and complications amongst the groups. There were 20 patients in laser and 5 in surgical group with mild pain. Moderate pain was seen by 7 patients in laser and 15 patients in surgical group. There were only 3 patients in laser group and 10 patients in surgical group with serve pain. There was a significant difference in the pain score amongst both the groups. Complications were only observed in surgical group with significant difference in urinary retention.

DISCUSSION

Hemorrhoidal conditions is graded number one amongst colorectal disorders with foreseeable prevalence varying between 2.9 to 27.9%, with approximately 4% of these subjects are symptomatic.[12] Due to the increased frequency of hemorrhoids and even with treatment diversity, various complications like bleeding, thrombosis, fibrosis, strangulation, ulceration, suppuration, and pyemia can be seen.[13] There are various management modalities of hemorrhoids ranging from medicaments and ligation to stapled hemorrhoidopexy, laser photocoagulation therapy, sclerothereapy, Doppler- imaged artery ligation, and ultimately surgery.[14] Milligan–Morgan surgical procedure is the gold standard for hemorrhoids management and the most commonly used surgical treatment. Postoperative pain is the most frequently observed complication with this surgical method. The other early postoperative complications include urinary retention, hemorrhage, and formation of abscess. The long- term complications like anal fissure and stenosis, stool incontinence, fistula, and recurrence.[15] These drawbacks of the surgical procedure have lead to the advent of lasers, giving rise to various advantages like easy and effective application, and noninvasive painless nature, and reduced needs of pharmaceutical drugs and therefore fewer side effects.[16] According to a study by Sadra and Keshavarz,[17] they found superiority of using intrahemorrhoidal coagulation using a 980- nm diode laser when compared with MM hemorrhoid surgery amongst patients with symptomatic hemorrhoid that were non responding to medical management strategies. The study conducted by Naderan et al.[18] verified that hemorrhoidal treatment with a 980- nm diode laser has nearly few advantages over surgical hemorrhoidectomy in managing patients for symptomatic hemorrhoids. This laser- ablation treatment procedure has lesser operative time, lesser postoperative pain, and better regression of hemorrhoids. Jahanshahi et al.[19] in their study reported that laser was a safe alternative for the management of hemorrhoids due to few postoperative complications like bleeding, stenosis, pain and recurrence. Karahaliloglu,[20] in the study used a 980- nm diode laser in the management of subjects with grade I and II hemorrhoids, and reported that the treatment is painless, leading to faster recovery amongst patients.

CONCLUSION

Laser hemorroidoplasty offers best intraoperative and postoperative outcomes when compared to surgical management. But the cost of laser is the only drawback associated with it. It offers significant reduction in the operative time and postoperative pain relief as compared to surgical treatment.

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