

Laser Therapy for Hemorrhoidectomy: A Systematic review of the Literature.

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Submitted: 20-09-2022

Accepted: 30-09-2022

ABSTRACT-

Hemorrhoids are common human affliction known since history and this is very common disease that affect any age group and both gender. There are different options for treatment of patient with hemorrhoids from conservative management with dietary factors ,rubber band ligation,sclerotherapy injection, diathermy coagulation or procedures like open surgical methods.

Recently various types of laser is introduced like as carbon dioxide, ytterbium-aluminum-garnet (Nd-YAG) in the management of hemorrhoids. Laser Hemorrhoidectomy technique is used to treat the patient with second and third degree hemorrhoids without any harm to surrounding tissue with less postoperative complications and short operative time.

Keywords: Laser Hemorrhoidectomy,

I. INTRODUCTION -

Hemorrhoids, or piles are one of the commonest affliction of the human race and cause a great amount of misery .the term “piles” is nonspecific when used by patients and may describe any local anal condition. The term may cover a large number of symptoms from bleeding due to rectal neoplasm to the irritation caused by fungus infection.⁽¹⁾because of the increased incidence of hemorrhoids and despite treatment diversity, several complication such as bleeding strangulation, thrombosis ,fibrosis , ulceration ,suppuration and portal pyemia can occur.⁽²⁾

Miligan-morgan procedure is the gold standard and mostly used surgical methods. Postoperative pain is the common problem with this surgery the other early complications are urinary retention, hemorrhage and abscess formation etc. these drawbacks leads to introduction of laser treatment for hemorrhoids having many advantages such as easy and efficient application and painless nature.⁽³⁾

In this article we aim to study the literature of laser Hemorrhoidectomy with other surgical methods in the management of hemorrhoids.

TREATMENT -

Prevention is the best treatment for hemorrhoids. Non operative treatment is recommended when hemorrhoids are symptoms of some other condition or disease, of course when carcinoma is present.

The need for treatment for hemorrhoids is primarily based on the subjective perception of severity of symptoms and the assignment of treatment is decided on traditional classification of hemorrhoids.⁽⁴⁾

Various proprietary creams can be inserted into the rectum from collapsible tube fitted with nozzle at night and before defecation are also useful.⁽⁵⁾

Non-surgical methods are considered to be the primary options for grades one to three [grade I-III] hemorrhoids.⁽⁶⁾

Non-operative management for hemorrhoids includes following procedures-⁽⁷⁾

- Rubber band ligation
- Injection sclerotherapy
- Infrared photocoagulation
- Cryosurgery
- Radiofrequency coagulation and excision
- Doppler Guided Hemorrhoidal artery ligation

If conservative measures fail to control symptoms may be referred for operative management.

Generally an uncomplicated hemorrhoidectomy is satisfactory on non-surgery or operation for both, patient and surgery.⁽⁸⁾

Operative management for Hemorrhoids includes following procedures-

- Closed sub mucosal Hemorrhoidectomy (Ferguson's technique)

- Open Haemorrhoidectomy (Milligan-Morgan method)
- Whiteheads Haemorrhoidectomy (Circumferential)
- Stapled Haemorrhoidectomy.

Post Haemorrhoidectomy pain is commonest problem associated with surgical techniques like

Complications – ⁽⁹⁾

Early complications	Late complications
<input type="checkbox"/> Pain	<input type="checkbox"/> Secondary Hemorrhage
<input type="checkbox"/> Acute retention of urine	<input type="checkbox"/> Anal stricture
<input type="checkbox"/> Reactionary Hemorrhage	<input type="checkbox"/> Anal fissure

Urinary retention is common complication following Haemorrhoidectomy and occurs in 10-50% of patients.

- Pain can be leads to fecal impaction
- Massive bleeding can be occurs immediate postoperative period.
- Long term sequel of Haemorrhoidectomy includes incontinence, anal stenosis.⁽¹⁰⁾

Haemorrhoidectomy is associated with significant complications including pain, bleeding and wound infection leads to prolonged hospital stay hence the Laser technique for Haemorrhoidectomy is a safe procedure associated with less postoperative pain. Non-excisional laser therapy was initially described in 1998 by Barr et al. with an experimental animal study.⁽¹¹⁾ Latter, non-excisional laser therapy was applied in humans, with laser hemorrhoidoplasty first described in 2007 by karahalioglu⁸⁹ et al.⁽¹²⁾

Indications for laser Haemorrhoidectomy-

Patients with Grade III Hemorrhoids can be treated with Laser therapy.

Mechanism of action –

- Laser Haemorrhoidectomy is a relatively new procedure for treatment of hemorrhoid in which the hemorrhoid blood flow is coagulated by the laser. Prior to procedure, patients need

to be anesthetized. The laser probe will be inserted into the hemorrhoids. Due to an intense amount of heat, the laser beam cauterizes and seals off the blood vessels, therefore the hemorrhoids will simply shrink while reducing the risk of excessive bleeding during and after the procedure. Since laser hemorrhoidectomy is a precise procedure, it leaves no effect to the surrounding tissues as well as the anal sphincters.

- The intense beam of light interact with tissue and can be used to cut, coagulate or ablate the tissue, seal off nerves and tiny blood vessels. by sealing superficial nerve endings patient have minimum postoperative discomfort. Laser is used for dissecting and excising pile masses. it is done for internal Hemorrhoids⁽¹³⁾
- The laser beam induced a degeneration of mucosal and sub mucosal tissues, causing shrinkage of the underlying tissue and its arterial branch.

ADVANTAGES -

- Less operative time, less intra operative and postoperative bleeding and pain.
- Rapid healing quick recovery done under LA/SA. Less complications; minimal pain, constipation, and urinary retention.
- The laser is newer modality for management of Hemorrhoids because of its inherent therapeutic property. It seals of nerves and tiny blood vessels with an invisible light. This results in less discomfort, less medication and faster healing.
- The procedure can be performed as a day care procedure.
- Skilled and experienced surgeon can use a Laser light with pin point accuracy
- The unwanted Hemorrhoids is simply vaporized or excised
- Patient have minimum postoperative discomfort as superficial nerve endings are sealed and the sealing of tiny blood vessels offers a relatively dry filed and the surgeon can operate in controlled and bloodless environment. Procedure can often be completed more quickly and with less difficulty for both patient and surgeon.⁽¹⁴⁾
- Laser can be used alone or in combination with other modalities.

- Most studies with laser Haemorrhoidectomy show a high patient satisfaction ratio up to 90%.
- Laser therapies appeared to be safe and effective techniques for the treatment of haemorrhoidal disease. More over. The learning curve is quick and was estimated from three to five cases.⁽¹⁵⁾
- The aim of the study to systematically review the outcome of laser therapies for the treatment of hemorrhoids
- Laser Haemorrhoidectomy is considered a minimally invasive procedure for hemorrhoid treatment. The procedure allows patient to achieve the best possible outcomes with minimal discomfort, rapid recovery.



The patient will return to daily routine quicker with good quality of life.



II. CONCLUSION-

Now a days laser Haemorrhoidectomy is more preferable choice as compare to open surgical haemorrhoidectomy due to post-operative pain duration time is significantly lesser in laser Haemorrhoidectomy.



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