

LASER IN FISTULA-IN-ANO TREATMENT: CURRENT TRENDS AND CLINICAL OUTCOMES

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INTRODUCTION

Health is one of our most precious assets, but we often pay little attention to the warning signs our bodies send to us. Pain or unusual sensation, particularly in the anal region, causes confusion and complications, especially when it involves fistulas. According to a study, anal fistula is found in 8.6 cases out of 100,000 people. If identified early and promptly treated, anal fistulas can be cured. In this blog, let us delve into the specifics of anal fistula and uncover the answer to the most important question: how do you know if you have a fistula?

What is Fistula?

An anal fistula is an abnormal tunnel-like passage between the anal canal and the surrounding skin. It may be caused by infections,

abscesses, injury, or other conditions affecting the anal region.

Anal fistulas are typically the result of an infection originating in an anal gland. This infection leads to an abscess, a collection of pus within the tissue. When this abscess develops a single internal opening within the anal canal, it is referred to as a sinus. However, if the infection progresses and creates an external opening through the skin, it becomes a fistula.

The anal fistula provides an unintended pathway for faecal matter and pus to escape, often causing leakage that is beyond the patient's control due to the absence of sphincters in the tract. This condition can cause significant discomfort and awkwardness in daily life.

Fistulas generally occur within the anal region, but they can also occur in other urinary tract and digestive systems. Anal fistulas are painful and cause infections in some cases if left untreated. So, early recognition and treatment are crucial to avoid complications.

Symptoms of Fistula

Recognition of anal fistula symptoms will help you identify whether you have a fistula. Some common symptoms include:

- **Abnormal Discharge or Pus:** The primary sign of a fistula is a foul-smelling discharge from the anal region.
- **Persistent Pain or Ache:** Pain or discomfort around the anus often worsens by sitting, bowel movements, or certain activities.
- **Swelling in the Affected Region:** Inflammation may take place, causing swelling around the anus, indicating an underlying problem.
- **Changes in Bowel Habits:** Difficulty passing stool, frequent bowel movements, or irritation in the anal region may be linked to an anal fistula.

What are the Causes of Fistula?

Most anal fistulas arise as a result of an anal abscess. If an abscess does not heal properly after drainage of pus, then the fistula may develop. In 40% of the cases where anal abscess is drained, fistulas are formed. The overall incidence is about nine cases per 100000 population per year in Western Europe, and those in their third, fourth and fifth decades of life are most commonly affected.^[1]

Other less common causes of an anal fistula are:

- **Crohn's Disease:** A disease which causes chronic inflammation of the digestive tract.
- **Diverticulitis:** An infection of the small pouches that can develop in the wall of the large intestine; such pouches are called diverticula.
- **Hidradenitis Suppurativa:** A chronic skin disease that produces abscesses and scarring.
- **Infections:** Diseases like tuberculosis (TB) and HIV can cause fistulas to form.
- **Surgical Complications:** Fistulas may occur as a result of the surgeries performed near the anus.

Laser treatment (FiLaC - Fistula-tract Laser Closure)

Laser treatment for anal fistula, or laser ablation, is a modern, minimally invasive surgical technique that utilizes laser energy to obliterate and seal the fistula tract. The procedure

involves inserting a radial laser fiber into the fistula tract, which then emits laser energy to denature the epithelial lining and destroy the tissues along the tract, causing it to shrink and close. The internal opening is then closed with sutures or, in some cases, a skin flap.

Advantages of laser treatment

- **Minimally invasive:** Unlike traditional surgery, laser treatment involves minimal incisions, reducing tissue damage, pain, and hospital stay.
- **Faster recovery:** Patients experience quicker recovery times and can typically resume normal activities sooner compared to conventional surgeries, according to Pristyn Care.
- **Reduced risk of complications:** Laser treatment is associated with a lower risk of bleeding, infection, and damage to the surrounding tissues, especially the anal sphincter, minimizing the risk of incontinence, reports Pristyn Care.
- **Effective for complex cases:** Laser therapy can be highly effective in treating complex fistulas with multiple tracts or branches, as the laser can precisely target each tract.
- **Sphincter preservation:** FiLaC is a sphincter-sparing technique, which helps to preserve the function of the anal sphincter, reducing the risk of fecal incontinence, states www.medfin.in.
- **Superior cosmetic outcomes:** Laser therapy results in less scarring compared to traditional surgery, according to Pristyn Care.

Success rates

Success rates for laser treatment vary depending on factors such as the type and complexity of the fistula, the patient's overall health, and the surgeon's expertise. Studies indicate success rates ranging from 60% to 85%. Some studies report higher success rates, particularly with repeated procedures.

Recovery

Recovery time generally falls within a few weeks, with most patients able to return to normal activities within days or weeks. Full recovery typically takes 4-6 weeks. Postoperative care includes managing discomfort with medication, keeping the area clean and dry, maintaining a healthy, high-fiber diet, avoiding strenuous activity, and attending follow-up appointments.

Potential risks and limitations

- **Incomplete Closure or Recurrence:** There is a possibility that the fistula may not completely close or may recur after the procedure.

- Infection: Although the risk is lower than with traditional surgery, infection at the insertion site can occur.
- Bleeding: Minor bleeding can happen during or after the procedure, but it is usually minimal.
- Damage to Surrounding Tissues: There is a small risk of damage to surrounding tissues, including the sphincter muscles, although it is less likely than with conventional surgery.
- Cost: Laser treatment may be more expensive than traditional surgery, according to www.clinicahealth.in.

Comparison of Surgical Methods for Fistula in Ano Treatment

Aspect	Laser Treatment	Fistulotomy	Fistulectomy	Seton Placement
Procedure	Minimally Invasive, Laser probe delivers thermal energy to close the fistula tract without cutting.	Open Surgery, Fistula tract is cut open and left to heal by secondary intention.	Complete excision of the fistula tract and surrounding tissue.	A thread is placed in the fistula tract to promote drainage and gradual healing.
Invasiveness	Minimally invasive, no major tissue cutting	Highly Invasive, involves cutting sphincter muscles	High Invasive, extensive tissue removal	Moderately invasive, requires seton insertion and possible follow-up surgeries.
Anaesthesia	Local or regional, often outpatient.	General or spinal anaesthesia, may require hospital stay.	General or spinal anaesthesia, hospital stay common	Local or general, may require multiple procedures.
Sphincter Preservation	High, minimal risk of incontinence (1-5%)	Moderate to high risk of incontinence (10-40%)	High risk of incontinence (15-40%)	Variable, depends on seton type and subsequent surgery.
Pain Level	Low, minimal postoperative discomfort.	Moderate to high, significant pain due to open wound	High, extensive tissue damage increased pain.	Moderate, ongoing discomfort from seton presence.
Recovery Time	Fast, 1-3 days to resume normal activities	Slow, 4-8 weeks for complete healing.	Slow, 6-12 weeks due to extensive tissue excision	Variable, weeks to months, depending on seton duration
Success Rate	70-85% for primary closure, lower for complex fistulas	80-95% for simple fistulas, less effective for complex cases	75-90%, higher recurrence in complex fistulas	60-80%, often requires additional surgery for closure.
Recurrence Rate	10-15% for simple fistulas, higher for complex cases	10-20%, depends on fistula type and surgeon skill	15-30%, higher due to tissue scarring	20-40%, incomplete closure common without further surgery
Hospital Stay	Outpatient, rarely requires overnight stay	1-2 days or more for complex cases.	2-5 days due to extensive surgery	Outpatient or short stay, multiple visits needed
Cost	Moderate to high, specialized equipment increased cost	Moderate, widely available, lower equipment costs.	High, due to longer surgery and hospital stay.	Moderate, costs accumulate with multiple procedures.

Suitability	Ideal for simple and some complex fistulas, suitable for high risk patients (eg Corhn's disease)	Best for simple, low fistulas, risky for high or complex fistulas	Used for complex fistulas, higher risk for complications.	Preferred for complex or high fistulas to maintain drainage before definitive surgerg
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The only technique to remove anal fistula is via surgery. Fistula therapy can normally not be done without surgery. Anal fistula laser treatment is a USFDA approved surgery that efficiently heals fistula. Laser treatment for fistula, which is also known as FiLaC (fistula laser closure) or LAFT (laser ablation of fistula tract), are the most prevalent and popular treatment for Anal Fistula. The method involves the transmission of laser energy in fistula lumens at 360° via a radial fiber which is gently removed from the exterior opening. Laser ablation is done on the lumen of fistulas which is a 'sphincter-saving' technique. Laser treatment is used for any kind of fistula, especially in cases in which sphincter muscle of the anus requires more care.

Risks of Fistulotomy

A surgical treatment called anal fistula surgery is performed to treat anorectal tissue. The objective is to permanently eliminate or seal the fistula channel. A successful fistulotomy operation can have lasting effects. Fistula recurrence after fistulotomy is extremely rare. However, there is some risk involved, particularly if the fistula tract is located in a challenging area. The following dangers exist:

Incontinence

Particularly when the fistulae are located in high regions, fistula tracts may pass directly through the sphincter muscles. The muscles may need to be cut during a fistulotomy, and there is a good chance that they won't work properly thereafter. Patients are unable to hold solid waste after sphincter muscle damage. Fecal incontinence is the term for this condition.

Incontinence of gas The involuntary muscle that prevents liquid and gas from leaving the rectum is a component of the sphincter system. A person loses the ability to control the gas passage if the fistulotomy affects this sphincter muscle.

Contamination In general, the risk of infection is higher with open surgical procedures than it is with laser treatments.

Reasons to Choose Laser Anal Fistula Treatment

There is no risk of incontinence with laser anal fistula treatment. The sphincter muscle may be saved with laser fistula therapy. Because of this, laser surgery has considerably lower incontinence risks than fistulotomy.

There is no infection risk. Similar to fistulotomy operations, laser treatments appear to have minimal post-procedure infection rates.

Additional Benefits of Laser Therapy

No medicine

Very minor discomfort

Procedure that is barely invasive

Quicker recovery than with traditional operations

Less post-operative problems

Following Anal fistula laser therapy, same-day discharge

Low Recurrence Rate. Laser procedures have one of the lower recurrence rates among surgery to close sphincter-saving fistulas

Anal Fistula Laser Treatment Procedure

Through a laser probe, a carefully targeted laser energy is delivered in the fistula tract during the procedure. This treatment delicately destroys the tissue in the anal area. In contrast to a difficult open surgery, the surgeon doesn't physically remove the drainage or the pus with a laser therapy. Once the fistula has healed, the surgeon removes the laser probe and seals it. The laser treatment is over in a matter of minutes. The healthy tissue is in no way disturbed by the therapy. Traditional fistula surgery has a longer recovery period than laser surgery, which is nearly painless.

What Happens if a Fistula is Not Treated?

If my fistula is untreated, the following complications can occur:

- **Chronic Infection:** Untreated fistulas eventually cause infection, creating further health problems.
- **Spreading of the infection:** When not treated, fistulas tend to spread in different directions and higher up the anal canal, which makes it complex to treat and may require a bigger surgery and a longer time to heal after surgery.

- **Abscess Development:** A pus-filled abscess may be formed, which will be painful and require drainage.
- **Influence on Quality of Life:** Discomfort and the threat of embarrassing symptoms influence daily activities and mental well-being.
- **Serious Health Issues:** Untreated fistula can lead to severe complications due to unnecessary connections between organs.

Lifestyle Changes to Prevent Fistula

Some lifestyle changes help avoid the condition and are necessary after fistula treatment:

- **Maintain Good Hygiene:** Keep the affected area clean to prevent infection and other complications.
- **Exercise Regularly:** Overall health can be maintained by exercising on a regular basis, which will help the digestive system to work effectively.
- **Stress Management:** Yoga or meditation is helpful in overall well-being and minimising the flare-ups of inflammatory disorders.

Dietary Tips for Reducing the Risk of Fistulas

Your gastrointestinal health is greatly influenced by the food you eat, and it can even prove useful to prevent anal fistulas. Follow the dietary regulations such as:

- **High-Fibre Diet:** Eat fruits, vegetables, and whole grains to help with proper digestion and prevent constipation.
- **Hydration:** Drink sufficient water during the day to facilitate digestive health.
- **Foods to Avoid:** Restrict foods like spicy foods, caffeine, and alcohol that may irritate the gut.

CONCLUSION

Laser treatment for fistula-in-ano, especially FiLaC (Fistula-tract Laser Closure), has emerged as a promising, minimally invasive, and sphincter-preserving technique. Compared to traditional surgeries like fistulotomy and fistulectomy, it offers reduced pain, faster recovery, minimal hospital stay, and a lower risk of incontinence. Although recurrence and incomplete closure remain challenges, success rates of 70–85% make it a reliable option, particularly for patients with complex or high fistulas. Early diagnosis, proper patient selection, and postoperative care are essential to achieve favorable outcomes. With advancing technology and increasing clinical experience, laser therapy may soon become the preferred standard of care in anal fistula management.

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