



## Review Article

# Combined filac and lift procedure for complex fistula in-ano: A case report and review of technique

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## Abstract

Fistula-in-ano is a complex anorectal condition that presents both diagnostic and therapeutic challenges. The management of complex anal fistulas requires a precise approach to prevent recurrence while preserving sphincter function. This research article presents a case report of a patient with a complex anal fistula treated with a combined approach utilizing Ligation of Inter-sphincteric Fistula Tract (LIFT) and Fistula Laser Closure (FiLac). This dual approach effectively targeted both internal and external fistula tracts, promoting healing, reducing recurrence rates, and maintaining continence. This report provides a detailed description of the surgical technique, post-operative outcomes, and a discussion on the efficacy of the FiLac and LIFT combination in managing complex fistula-in-ano.

**Keywords:** Fistula-in-ano, FiLac, LIFT, Complex Fistula, Anal f/Fistula, Inter-Sphincteric Fistula, Laser Therapy.

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## 1. Introduction

Fistula-in-ano is a pathological communication between the anal canal and perianal skin, typically originating from an infected anal gland. The condition presents with persistent discharge, pain, swelling, and discomfort, significantly impacting the patient's quality of life. Anal fistulas are categorized as simple or complex based on their anatomical course and relation to sphincteric structures.<sup>1</sup>

Complex fistula,<sup>2</sup> which involve multiple tracts, high trans-sphincteric involvement, or supra-levator extension pose significant challenges in treatment due to the risk of recurrence and potential sphincter damage leading to fecal incontinence. Traditional surgical interventions, such as fistulotomy and seton placement,<sup>3</sup> can lead to prolonged healing and may compromise sphincter function. Recent advancements in minimally invasive techniques have led to the development of sphincter-sparing procedures such as LIFT and FiLac, which offer a better balance between successful fistula healing and functional preservation. LIFT involves the identification and ligation of the inter-sphincteric tract, while FiLac utilizes laser energy to ablate

the fistula tract, sealing it off and promoting healing with minimal tissue damage.<sup>4</sup>

This case report highlights the effectiveness of combining these two techniques for complex anal fistula treatment.

## 2. Case Presentation

A 42-year-old male patient presented to the colorectal surgery clinic with a two-year history of persistent perianal discomfort and intermittent sero-purulent discharge. He reported occasional swelling in the perianal region, particularly exacerbated by prolonged sitting and physical activity. The discharge was associated with mild pain that worsened during defecation but was not severe enough to cause significant distress. The patient also noted occasional itching and perianal dampness, leading to discomfort and hygiene concerns. He denied any history of trauma, previous perianal abscess drainage, or surgical interventions for anorectal conditions.

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Additionally, he did not report any systemic symptoms such as fever, weight loss, or fatigue, which could suggest an underlying infectious or inflammatory process. His bowel habits were regular, with no complaints of diarrhea, constipation, or blood in the stool. The patient had no known history of inflammatory bowel disease (Crohn's disease or ulcerative colitis), tuberculosis, diabetes mellitus, or other immunosuppressive conditions. He was a non-smoker and reported occasional alcohol consumption. His family history was unremarkable for colorectal or perianal diseases.

On inspection, an external fistula opening was identified at the 4 o'clock position in the perianal region, approximately 5 cm from the anal verge. The surrounding skin exhibited mild induration and discoloration, indicative of chronic inflammation. Gentle palpation elicited mild tenderness but no active discharge at the time of examination. A digital rectal examination revealed normal anal sphincter tone. No palpable masses or strictures were detected, but mild induration was noted along the inter-sphincteric groove, suggestive of an underlying fistulous tract. There was no evidence of acute abscess formation, fluctuance, or significant perianal swelling. (**Figure 5**).

Proctoscopic examination revealed no obvious internal opening, but a slight irregularity in the mucosa at the expected location of the primary fistula tract was observed. Given the chronicity of symptoms and the complex nature of perianal fistulas, further imaging was warranted to delineate the anatomy of the fistulous tract.

A high-resolution MRI fistulogram was performed to delineate the fistula anatomy, which revealed a primary fistula tract originating from the 4–5 o'clock position with an internal opening approximately 4.5 cm from the anal verge. The primary tract traversed the inter-sphincteric space, piercing the external anal sphincter on the left side. Extension of the tract into the ischio-anal fossa, exiting at the gluteal cleft. A secondary tract (19 × 7 mm) in the ischio-anal fossa, communicating with the primary tract. A third blind-ending tract (15 × 1.7 mm) extending into the inter-sphincteric space. These findings confirmed a complex trans-sphincteric fistula with secondary ramifications, making a conventional fistulotomy unfeasible due to the high risk of sphincter damage.

A combination of the Ligation of Inter-sphincteric Fistula Tract (LIFT) and Fistula Laser Closure (FiLac) procedures was performed under spinal anesthesia with the patient in the lithotomy position. This positioning ensured optimal exposure of the perianal region while minimizing pressure on the surgical site. Preoperative intravenous antibiotics were administered to reduce the risk of post-operative infection. The perianal area was shaved, cleansed, and prepped with povidone-iodine solution. A probe was gently introduced into the external fistula opening at the 4 o'clock position, 5 cm from the anal verge to delineate the primary fistulous tract. Methylene blue dye was injected into

the external opening to visualize its pathway and identify the internal opening, located approximately 4.5 cm from the anal verge in the anal canal. (**Figure 2, Figure 3**) To ensure precision, a hydrogen peroxide solution was injected alongside the dye, causing foaming at the internal opening, confirming its exact location. A 1.5-2 cm curvilinear incision was made at the inter-sphincteric groove near the identified internal opening to access the inter-sphincteric space.

Careful blunt and sharp dissection was performed to isolate the inter-sphincteric tract, ensuring minimal trauma to the external and internal anal sphincters. The fistula tract was carefully dissected free from the surrounding tissue and secured with absorbable sutures (3-0 Vicryl) to ligate and seal off communication between the anal canal and inter-sphincteric space. The tract was then divided, ensuring complete separation from the internal opening, thereby preventing further contamination and recurrence. This procedure is called LIFT. Hemostasis was meticulously achieved using bipolar cautery to prevent post-operative hematoma formation. This inter-sphincteric incision was closed using Vicryl 3-0 suture.

The external fistula tract was then prepared for laser ablation. We used Neo-V Diode Laser (12 Watt with operative frequency 1470 nm). A radial-emitting laser fiber was introduced through the external fistula opening, ensuring its correct placement along the fistulous tract. Laser was set on 8-watt and activated, delivering controlled energy pulses (8 seconds per application) along the tract while slowly withdrawing the laser fiber at a rate of 1 mm per second.

Same procedure was applied in secondary tract and in inter-sphincteric tract also. The laser induced fibrosis and shrinkage of the fistulous tract, effectively sealing it while minimizing collateral tissue damage. The external opening of this site was not closed to allow secondary healing and prevent premature closure, which could lead to recurrence. The patient was discharged on post-operative day 2 with minimal discomfort. A 6-week follow-up revealed complete closure of the external fistula opening. There were no signs of infection, recurrence, or persistent discharge. No reported post-operative fecal incontinence. A subsequent 3-month follow-up confirmed complete healing, with MRI findings showing resolution of the primary and secondary tracts. (**Figure 4, Figure 5**)



**Figure 1:** Fistula in ano showing external opening at 4 O'clock



**Figure 2:** Methylene blue dye injected to see internal opening of fistulous tract in anal canal.



**Figure 3:** Tract identified with both internal and external opening



**Figure 4:** Laser probe passed to induce fibrosis



**Figure 5:** Settings of laser machine

### 3. Discussion

Complex anal fistulas pose a significant challenge due to their deep extensions, secondary tracts, and potential for recurrence. Advantages of LIFT procedure are LIFT isolates and ligates the inter-sphincteric tract, preventing fistula recurrence from the internal opening.<sup>3</sup> Studies have demonstrated that LIFT has a success rate of 70-80% in complex fistula cases, while FiLaC offers a comparable success rate with an additional advantage of minimal invasiveness.

Conventional treatments such as fistulotomy may lead to unacceptable sphincter damage, while seton placement requires prolonged healing time and repeated procedures. The combined LIFT and FiLaC approach address these challenges effectively.<sup>5</sup>

The primary goals of treatment include Complete fistula healing, prevention of recurrence and preservation of continence with long term effective result.<sup>6</sup> It preserves the external anal sphincter, reducing the risk of incontinence. The procedure is minimally invasive and associated with faster healing times. There's one study which shows efficiency of FiLaC laser including data of five years, with successful outcome for long term.<sup>7</sup>

Advantages of the FiLaC Procedure is that the laser effectively ablates and seals the external tract with minimal collateral tissue damage. It promotes fibrosis and reduces the risk of persistent infection. The procedure is sphincter-sparing, making it ideal for complex and high fistulas.<sup>8</sup>

Modern management of fistula has improved the outcomes on the basis of healing, long term symptom free disease and less or no sphincter damage.<sup>9</sup> The LATFIA trial aims to compare FiLaC™ with the gold standard treatment with RAF. In case of noninferiority, FiLaC™ treatment could be standardized as a first line treatment for high trans-sphincteric fistulas. Better conservation of the patient's anal sphincter function could possibly be obtained.<sup>10</sup>

When combined, these techniques provide a comprehensive solution for treating complex fistulas, targeting both the internal and external tracts effectively.

#### 4. Conclusion

The combination of LIFT and FiLaC represents a promising approach for the treatment of complex fistula-in-ano. By simultaneously addressing the internal and external fistula tracts, this dual approach minimizes recurrence, preserves sphincter function, and promotes faster healing.

The case presented highlights the success of this method, demonstrating complete fistula resolution without complications. Further clinical trials and long-term studies are warranted to establish this combined approach as a standard treatment for complex anal fistulas.

#### 5. Source of Funding

None.

#### 6. Conflict of Interest

None.

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