International Surgery Journal
Maniranjan N et al. Int Surg J. 2025 Nov;12(11):2012-2014
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20253467

Case Report

Flap and FiLaC™ duo heals a complex grade IV anal fistula: case report of a surgical success

Nobby Maniranjan[1], Sufaya Dilawar[2]*

[1]Pristyn Care, Trivandrum, Kerala, India
[2]Pristyn Care, Gurgaon, Haryana, India

Received: 07 August 2025
Revised: 09 September 2025
Accepted: 22 September 2025

***Correspondence:**
Dr. Sufaya Dilawar,
E-mail: medpublications@pristyncare.com

ABSTRACT

Complex anal fistulas, particularly those classified as grade IV, present significant management challenges due to their intricate anatomy, risk of recurrence, and potential for sphincter damage leading to incontinence. Traditional sphincter-sparing techniques such as anal mucosal advancement flap has been widely used, while minimally invasive approaches like fistula laser closure (FiLaC™) have emerged as adjunctive therapies. This case report describes a successful treatment of a 44-year-old male with a complex trans-sphincteric fistula using a combination of mucosal advancement flap and FiLaC™ laser ablation. A 44-year-old male presented with chronic purulent discharge from multiple perianal swellings for three years. Magnetic resonance imaging (MRI) fistulogram identified a grade IV complex trans-sphincteric fistula (St. James's University Hospital Classification) with a single internal opening at 6 o'clock and multiple ramifications. Under regional anesthesia, the patient underwent surgical exploration. Three external tracts located at 1, 3, and 5 o'clock positions were traced to a single trans-sphincteric internal opening. The internal opening was closed with 2-0 vicryl sutures. Laser ablation using FiLaC™ was performed after thorough curettage, followed by creation and advancement of a healthy anal mucosal flap to cover the internal opening.

Keywords: Anal fistula, Mucosal advancement flap, FiLaC™, Complex fistula, Sphincter-sparing surgery, Multitract fistula

INTRODUCTION

Anal fistulas, especially those with complex trans-sphincteric tracts or multiple ramifications, are challenging to treat because of their anatomical complexity and the associated risk to continence and recurrence. The Parks classification and its modified version, the St. James's University Hospital magnetic resonance imaging (MRI) classification, are commonly used to grade fistulas, with grade IV representing high or complex fistulas crossing extensive segments of both the internal and external sphincters.[1,9]

While simple fistulas may be effectively treated with fistulotomy, complex fistulas require sphincter-preserving approaches to prevent incontinence.[11] The mucosal advancement flap has long been employed, particularly when the internal opening is clearly accessible, although recurrence remains a concern, especially in branched or residual tracts.[4,10]

Fistula laser closure (FiLaC™) technology, using radial-emission diode laser energy, offers a minimally invasive method to ablate the epithelialized fistula tract while sparing the sphincter complex.[5] Reported healing rates range from 54% to over 80%, depending on complexity and technique.[6,8]

Combining FiLaC™ with mucosal advancement flap repair may enhance outcomes in complicated cases by addressing both the internal opening and branching tracts.[6,12]

CASE REPORT

Patient history

A 44-year-old male presented with a three-year history of intermittent purulent discharge from multiple perianal swellings. He experienced occasional pain but had no systemic symptoms.

Evaluation and imaging

On examination, three discrete external openings were found at 1, 3, and 5 o'clock positions, approximately 5–7 cm from the anal verge. Probing confirmed that these external tracts merged into a single internal tract. MRI fistulogram revealed a high trans-sphincteric fistula with multiple ramifications and a single internal opening at 6 o'clock, located 3 cm from the anal verge, classified as grade IV.[1,9]

Management

Surgical approach

The patient was positioned in lithotomy under regional anesthesia. An anal mucosal advancement flap and FiLaC™ laser ablation was planned and performed (Figure 1).

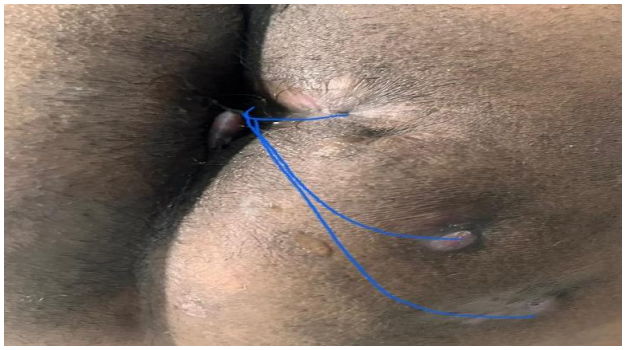

Figure 1: Preoperative image showing multiple external fistulous openings with a seton in situ, indicating a complex anal fistula.

Intraoperative findings

Three external tracts at 1, 3, and 5 o'clock converged into a single trans-sphincteric tract with an internal opening at 6 o'clock. The internal opening was closed with 2-0 Vicryl sutures. Laser ablation of the tracts was performed following curettage, and a healthy mucosal flap was advanced and secured over the internal opening (Figure 2 and 3).

Postoperative course

The postoperative period was uneventful, with complete healing observed within four weeks and no reported incontinence or recurrence during follow-up.

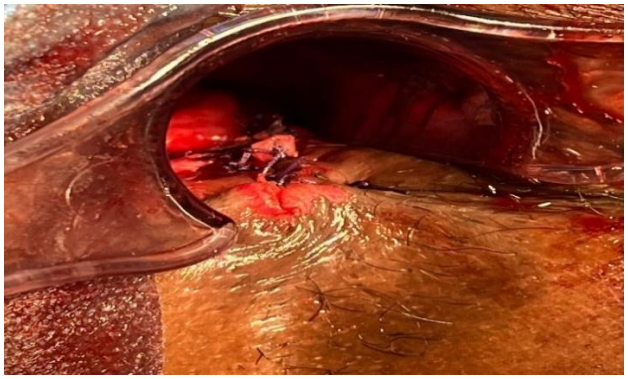

Figure 2: Intraoperative image showing identification of the internal fistula opening using a retractor for anal canal exposure.

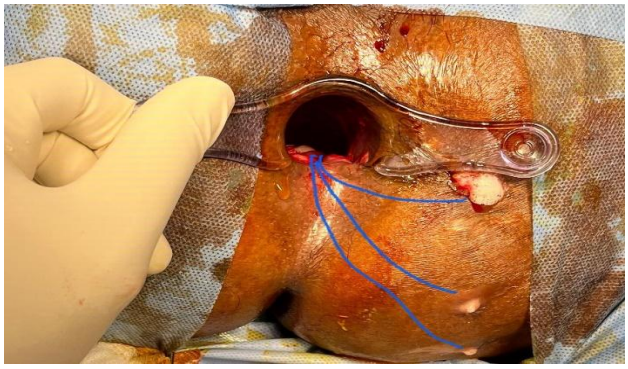

Figure 3: Intraoperative image demonstrating the seton traversing a complex fistulous tract with multiple external openings.

DISCUSSION

The management of complex anal fistulas focuses on achieving complete healing while preserving sphincter function. The present case underscores the effectiveness of combining mucosal advancement flap and FiLaC™ laser ablation in treating a high trans-sphincteric fistula. The mucosal advancement flap is a reliable technique, with García-Aguilar et al reporting success rates between 60–70% in cases where the internal opening is well defined, though recurrence remains a challenge in branched tracts.[4] Similarly, D'Hoore and Penninckx highlighted that while the flap approach is effective, its success is reduced in highly complex fistulas.[11] FiLaC™, introduced by Wilhelm, is a sphincter-preserving technique offering healing rates of up to 80% in select cases.[5] Giamundo et al confirmed long-term healing, although they noted that multi-branched fistulas may present higher recurrence risks.[6]

Combining both techniques, as suggested by Uzun et al yields improved outcomes in complex cases, reducing recurrence and preserving continence.[7] Adegbola et al emphasized the importance of patient selection and noted that combination approaches optimize healing in difficult cases.[8] Our case corroborates these findings with complete

healing within four weeks and no recurrence. Charalampopoulos et al further noted that combination techniques reduce complications while achieving optimal outcomes in complex fistula cases.[9] However, as highlighted by Fuschillo et al, larger studies are necessary to confirm the long-term efficacy of this approach.[12]

CONCLUSION

This case demonstrates that a combination of anal mucosal advancement flap and FiLaC™ laser ablation is an effective approach for treating complex grade IV anal fistulas. The patient achieved complete healing without complications or incontinence. While promising, larger studies are warranted to validate these findings and establish long-term outcomes.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Parks AG, Gordon PH, Hardcastle JD. A classification of fistula-in-ano. Br J Surg. 1976;63(1):1-12.
2. Ratto C, Litta F, Donisi L, Parello A, Doglietto GB. Novel sphincter-sparing approaches for anal fistula. World J Gastroenterol. 2015;21(27):8361-71.
3. Meinero P, Mori L, Gasloli G. Endofistula laser ablation: a new sphincter-saving procedure for anal fistula. Tech Coloproctol. 2011;15(4):417-22.
4. García-Aguilar J, Belmonte C, Wong WD, Goldberg SM, Madoff RD. Mucosal advancement flap for complex anal fistula. Dis Colon Rectum. 1996;39(6):585-9.
5. Wilhelm A. A new technique for sphincter-preserving anal fistula treatment: FiLaC™. Tech Coloproctol. 2011;15(4):445-9.
6. Giamundo P, Geraci M, Tibaldi L, Valente M. Closure of fistula-in-ano with FiLaC™ laser: long-term results. Colorectal Dis. 2014;16(2):62-7.
7. Uzun H, Kara YB, Eser M, Kaptanoğlu L, Kement M. Comparative outcomes of standard laser fistula closure (filac) versus filac combined with advancement flap in the treatment of complex anal fistulas. Tech Coloproctol. 2024;29(1):7.
8. Adegbola SO, Sahnan K, Tozer P, Warusavitarne J. Emerging Data on Fistula Laser Closure (FiLaC) for the Treatment of Perianal Fistulas; Patient Selection and Outcomes. Clin Exp Gastroenterol. 2021;14:467-75.
9. Charalampopoulos A, Papakonstantinou D, Bagias G, Nastos K, Perdikaris M, Papagrigoriadis S. Surgery of Simple and Complex Anal Fistulae in Adults: A Review of the Literature for Optimal Surgical Outcomes. Cureus. 2023;15(3):e35888.
10. Zimmerman DDE, Stijns J, Wasowicz DK, Gottgens KWA. Transanal Advancement Flap Repair: The Current Gold Standard for Cryptoglandular Transsphincteric Perianal Fistulas. Turk J Colorectal Dis. 2019;29(3):104-10.
11. D'Hoore A, Penninckx F. The pathology of complex fistula in ano. Acta Chir Belg. 2000;100(3):111-4.
12. Fuschillo G, Pata F, D'Ambrosio M, Selvaggi L, Pescatori M, Selvaggi F, Pellino G. Failure rates and complications of four sphincter-sparing techniques for the treatment of fistula-in-ano: a systematic review and network meta-analysis. Tech Coloproctol. 2025;29(1):116.

Cite this article as: Maniranjan N, Dilawar S. Flap and FiLaC™ duo heals a complex grade IV anal fistula: case report of a surgical success. Int Surg J 2025;12:2012-4.