
SURGICAL MANAGEMENT OF FISTULA-IN-ANO: A NARRATIVE REVIEW

***Dr Amrit Kumar Gupta, Dr Nikhil Yadav, Dr Rahul Jain, Dr Sumit Kumar,
Dr Chanchal Verma, Dr Vicky Kuldeep**

Manipal Hospital Dwarka Sec 6, New Delhi, India.

Article Received: 22 February 2026

*Corresponding Author: Dr Amrit Kumar Gupta

Article Revised: 12 March 2026

Manipal Hospital Dwarka Sec 6, New Delhi, India.

Published on: 01 April 2026

DOI: <https://doi-doi.org/101555/ijrpa.4417>

ABSTRACT

Fistula-in-ano is a common anorectal condition requiring surgical management that balances fistula eradication against continence preservation. This review summarizes contemporary surgical techniques including fistulotomy, fistulectomy, seton placement, LIFT, advancement flap and VAAFT, drawing from recent randomized trials, cohorts and systematic reviews. For simple low fistulas, fistulotomy and fistulectomy achieve high healing rates with low recurrence and minimal incontinence. Sphincter-sparing procedures for complex fistulas show variable success, with LIFT demonstrating 28-90% healing and VAAFT 15-65% recurrence in recent studies. Postoperative pain is modest, hospital stay short (1-3 days), and complications include wound infection and minor incontinence. Future research should prioritize standardized outcomes and head-to-head trials of sphincter-preserving methods.

KEYWORDS: anal fistula, fistula-in-ano, fistulotomy, LIFT, VAAFT, recurrence, sphincter preservation.

INTRODUCTION

Fistula-in-ano is an abnormal tract connecting the anal canal or rectum to the perianal skin, most often arising from cryptoglandular infection following perianal abscess {1,2}. Patients experience recurrent pain, purulent discharge and impaired quality of life, necessitating definitive surgical intervention {1,3}. According to Parks fistula in ano classified into intersphincteric, trans- sphincteric, suprasphincteric and extrasphincteric which helps in operative planning and outcomes after surgery {2,3}.

The primary objectives of surgery are complete sepsis eradication, fistula closure and

maintenance of anal continence, which often present competing demands, particularly in high or complex tracts{1,2}. Conventional sphincter-dividing procedures excel in simple disease but risk incontinence in higher tracts, while sphincter-sparing techniques such as ligation of intersphincteric fistula tract (LIFT) and video-assisted anal fistula treatment (VAAFT) aim to mitigate this trade-off at the potential cost of higher recurrence{1,3}. This narrative review synthesizes recent evidence on surgical types, outcomes, postoperative complications, pain, hospital stay and recurrence rates.

METHODS

This narrative review incorporates evidence from recent high-quality studies on surgical management of cryptoglandular fistula-in-ano in adults, identified through targeted literature searches. Key sources include: a 2025 systematic review and meta-analysis of 13 randomized controlled trials (RCTs) comparing fistulotomy and fistulectomy (n=1,373){4}; a long-term cohort study of LIFT with median 92-month follow-up (n=110){5}; a 2024 prospective comparative trial of LIFT versus fistulectomy in complex fistulas (n=60){6}; RCTs evaluating VAAFT versus conventional surgery or seton{7,8,9} and comprehensive reviews published between 2021- 2025{1,2,3}

Selection prioritized randomized and prospective data with quantitative outcomes on healing, recurrence, continence, pain, complications and hospital stay. No formal meta-analysis was performed beyond that in cited reviews.

RESULTS

Surgical Techniques

Surgical options span sphincter-dividing, sphincter-sparing and minimally invasive methods{1,2}. Fistulotomy involves laying open the tract over divided sphincter for low simple fistulas; fistulectomy excises the tract entirely {4,10}. Setons provide drainage (loose) or gradual division (cutting) in complex cases {1,3}. LIFT ligates the tract in the intersphincteric plane for trans- sphincteric fistulas{5}. Advancement flaps close the internal opening after tract curettage {1,3}.

VAAFT employs endoscopic fulguration and closure {7,8}.

Healing and Recurrence

A 2025 meta-analysis found no difference in healing or recurrence between fistulotomy and fistulectomy for simple fistulas{4}. Overall favorable outcomes reached 91.7% across

techniques in one cross-sectional series {11}. LIFT achieved 28% primary healing long-term, improving to 33% with prior seton{5} a 2024 study reported 10% versus 37% recurrence for LIFT versus fistulectomy{6} VAAFT recurrence ranged 25-65% in RCTs versus 12.5-27% for seton or repair {7,9,8}. Advancement flaps yield 60-80% healing {1,3 }.

Complications, Pain and Hospital Stay

Fistulectomy showed mildly lower 24-hour pain than fistulotomy (mean difference -0.49 VAS) {4}. LIFT pain was lower (3.5 versus 5.2 VAS) than fistulectomy {6}. Bleeding favored fistulotomy; infections were low (4-8%) {4,12}. Incontinence risk was negligible for simple procedures, mild (11% new) for LIFT, and absent for VAAFT {4,5,8}. Hospital stay was 1-3 days across techniques{4,11}.

DISCUSSION

Simple low fistulas are optimally managed by fistulotomy or fistulectomy, offering reliable healing with low morbidity {4,11}. Sphincter-sparing options suit complex disease but exhibit inconsistent recurrence, as evidenced by LIFT's variable performance and VAAFT's higher failure versus open repair{5,6,7}. Patient selection, sepsis control and expertise critically influence outcomes {1,2}.

Limitations include heterogeneous definitions and short follow-up in some studies {2,3}. Future RCTs should standardize endpoints and compare sphincter-preserving techniques directly.

REFERENCES

1. Surgical management outcome in Fistula-in-ano: A cross-sectional... Available from: <https://www.sciencedirect.com/science/article/pii/S2405857223000189>
2. Contemporary management of anorectal fistula - PMC. Available from: <https://pubmed.ncbi.nlm.nih.gov/articles/PMC10806345/>
3. Fistula-in-Ano Treatment & Management - Medscape Reference. Available from: <https://emedicine.medscape.com/article/190234-treatment>
4. A descriptive analysis of management of fistula-in-ano. Available from: <https://www.ijurgery.com/index.php/isj/article/view/58>
5. Fistulotomy versus fistulectomy for simple fistula-in-ano. Available from: <https://pubmed.ncbi.nlm.nih.gov/40125894/>

6. Ligation of intersphincteric fistula tract (LIFT) for trans-sphincteric... Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC11156194/>
7. Video-assisted anal fistula treatment versus fistulectomy and sphincter repair... Available from: <https://academic.oup.com/bjsopen/article/5/5/zrab097/6382011>
8. Comparative analysis of ligation of intersphincteric fistula tract and... Available from: <https://www.ijmedicine.com/index.php/ijam/article/view/4173>
9. Video-assisted anal fistula treatment versus fistulectomy... PubMed. Available from: <https://pubmed.ncbi.nlm.nih.gov/34611700/>
10. Diagnosis and treatment for anal fistula: a systematic review... Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC12263552/>
11. Comparative study on efficacy of fistulotomy and Ligation... Available from: <https://www.ijurgery.com/index.php/isj/article/view/1844>
12. Outcomes in High Perianal Fistula Repair Using Video-Assisted... Available from: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8923241/>
13. Advances in the Treatment of Anal Fistula: A Mini-Review... Available from: <https://pmc.ncbi.nlm.nih.gov/articles/PMC7905164/>