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Management of a Complex Y-Shaped Anal Fistula with Periscrotal Extension: The Role of FiLaC in a Sphincter-Preserving Strategy

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Abstract: **Case Report**

Branching complex anal fistulas with anterior or periscrotal extension are uncommon and represent a therapeutic challenge, as eradication of sepsis must be balanced against preservation of anal continence. A 34-year-old man with no previous proctologic history presented with chronic perineal suppuration evolving over several months, associated with intermittent local pain. Clinical examination suggested a complex Y-shaped anal fistula with a single internal opening, multiple external openings, and a long anterior tract extending toward the periscrotal region, associated with a subcutaneous cavity. No clinical features suggestive of inflammatory bowel disease were identified. Operative exploration confirmed the fistulous anatomy. Fistulectomy of accessible tract segments was performed, followed by placement of two draining setons in order to control sepsis while preserving the sphincter complex. Concomitant hemorrhoidal disease, considered incidental, was treated separately during the same surgical session. Early postoperative outcome was favorable. Complex Y-shaped anal fistula with periscrotal extension is a rare anatomical presentation. A staged therapeutic strategy based on initial sepsis control with draining setons followed by definitive sphincter-preserving treatment may optimize outcomes while minimizing the risk of continence impairment. In this setting, FiLaC may represent a valuable option among definitive treatment modalities.

Keywords: Anal fistula, Complex fistula-in-ano, Y-shaped fistula, Periscrotal extension, Draining seton, FiLaC, Fistulotomy.

INTRODUCTION

Anal fistula is a common condition in proctologic practice and is most often of cryptoglandular origin. While most fistulas are simple, complex forms—characterized by multiple tracts, secondary extensions, associated cavities, recurrence, or close relationship to the sphincter apparatus—remain difficult to manage [1, 2].

Anterior extension toward the perineal and periscrotal region is uncommon and may follow planes of least resistance in the male anterior perineum, resulting in unusual clinical presentations and possible underestimation of the full fistulous anatomy [1, 3, 4].

We report a rare case of a complex Y-shaped anal fistula with periscrotal extension, highlighting the relevance of a staged therapeutic strategy aimed at controlling sepsis before definitive sphincter-preserving management.

Case Presentation

Patient information

A 34-year-old man was admitted for chronic perineal suppuration evolving over

several months, associated with intermittent local pain. He had no prior proctologic history. His surgical history included inguinal hernia repair and appendectomy. There was no known history of inflammatory bowel disease and no systemic symptoms were reported.

Clinical findings

Perineal examination revealed a main anterior external opening located at the 12 o'clock position, along with discharge from the periscrotal region. Induration suggested the presence of an extended fistulous tract associated with a subcutaneous cavity. Digital rectal examination and anoscopy suggested a single internal opening. No other anorectal lesion accounting for the suppuration was identified.

Diagnostic assessment

The presence of branching tracts, anterior periscrotal extension, and a secondary cavity allowed classification of this fistula as complex. No clinical features suggested Crohn's disease, tuberculosis, actinomycosis, or any other specific etiology.

No preoperative pelvic MRI was performed. Mapping of the fistulous anatomy relied on clinical examination and systematic intraoperative exploration.

Therapeutic Intervention

Surgery was performed under anesthesia and confirmed a Y-shaped fistula arising from a single internal opening and dividing into two main branches: an anterior perineal tract and a long tract extending toward the periscrotal region, associated with a secondary subcutaneous cavity.

Fistulectomy of accessible tract segments was performed. Two draining setons were then placed along the two fistulous branches in order to ensure continuous drainage, control local sepsis, and minimize the risk of sphincter injury. This sphincter-preserving strategy aimed to defer definitive treatment until satisfactory drainage and local inflammatory control had been achieved, in line with contemporary management principles for complex fistula-in-ano [2].

Concomitant hemorrhoidal disease, considered incidental, was treated separately during the same surgical session.

Follow-up and Outcomes

Immediate postoperative course was favorable, with clinical improvement and effective drainage of the fistulous tracts. Histopathological examination of the excised tissue showed no specific abnormality and no evidence of malignancy.

At 6-month follow-up, continence remained clinically preserved. Residual discharge persisted until the second postoperative month, with subsequent regression thereafter. After adequate sepsis control with draining setons, the patient was considered a candidate for definitive sphincter-preserving treatment based on FiLaC (Fistula Laser Closure), associated with limited fistulotomy tailored to the anatomy of the fistulous tract.

Figure 1: Intraoperative exploration of the fistulous tracts demonstrating the long anterior branch extending toward the periscrotal region and the Y-shaped configuration arising from a single internal opening

Figure 2: Intraoperative view of a complex Y-shaped anal fistula showing two external tracts, including an anterior tract with periscrotal extension, after placement of two draining setons ensuring continuous drainage

DISCUSSION

Anal fistulas are predominantly of cryptoglandular origin and are classically described according to their relationship to the sphincter complex [1, 2]. Complex fistulas include branching, recurrent, cavitary, or atypically extending forms. In this context, periscrotal extension is an unusual presentation, probably related to spread along fascial planes of the anterior perineum [3, 4].

The originality of this case lies in the Y-shaped configuration of the fistula, the length of the anterior tract, and its extension toward the periscrotal region. This type of presentation carries a risk of incomplete treatment if the entire fistulous anatomy is not properly delineated.

Importance of anatomical mapping

Accurate identification of fistulous tracts is a key step in management. Pelvic MRI is generally considered the imaging modality of choice for complex fistulas, as it allows mapping of tracts, identification of secondary extensions, and detection of associated collections [2–4]. In the absence of preoperative imaging, careful clinical assessment combined with systematic intraoperative exploration may still provide satisfactory anatomical characterization.

In cases with anterior periscrotal extension, the potential anatomical proximity of the fistulous tract to the urethra should also be considered. In this setting, perioperative urinary catheterization may serve as a simple and useful landmark to help identify the urethra and reduce the risk of urethral trauma during surgical exploration and treatment.

Rationale for the therapeutic strategy

Management of complex anal fistulas must address two major objectives: control of sepsis and preservation of continence. Aggressive one-stage surgery involving substantial sphincter division may lead to functional impairment. In this context, draining setons play a central role in sphincter-preserving management by ensuring prolonged drainage, reducing local inflammation, and preparing the field for delayed definitive treatment [2].

In the present case, placement of two draining setons allowed sepsis control along both fistulous branches while avoiding excessive sphincter division during the initial stage.

Role of FiLaC

Among currently available sphincter-preserving techniques, FiLaC appears to be an attractive option in selected complex fistulas. It enables endoluminal ablation of the fistulous tract with expected low impact on continence [5, 6]. Its association with limited fistulotomy, when supported by local anatomy, may improve healing rates while maintaining a cautious approach toward sphincter preservation.

Limitations

This report has the inherent limitations of a single-case observation. The lack of preoperative MRI and the absence of a

standardized continence score limit the strength of the conclusions, despite a satisfactory 6-month clinical follow-up. Nevertheless, the documented preservation of continence and the progressive regression of discharge strengthen the clinical relevance of this observation.

CONCLUSION

Complex Y-shaped anal fistula with periscrotal extension is a rare and anatomically challenging presentation. Its management requires careful delineation of fistulous anatomy and a staged therapeutic strategy balancing sepsis control with preservation of continence. Within this approach, draining setons play an essential initial role, while FiLaC, combined with limited and tailored fistulotomy, may represent a relevant definitive treatment option in a sphincter-preserving strategy.

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