

# A Rare Case of Long Complex Ano-Scrotal Fistula, Review of Literature and Its Management with LIFT

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**Abstract:** *Anorectal suppuration can be complicated during the acute phase or 6 months after by the formation of fistula-in-ano. Anal fistula is manifested as chronic discharge or pain in the peri-anal region associated with abscess formation. Abscess may sometimes undergo spontaneous decompression forming anal fistula. Anal fistulas can be either simple or complex based on certain features. The principle of management includes eradication of the septic foci with preservation of anal continence. Study present a case of 42 year male with chronic complex ano-scrotal fistula which is treated by ligation of the intersphincteric fistula tract (LIFT) procedure.*

**Keywords:** Fistula-in-ano, ano-scrotal fistula, LIFT

*Henceforth the above study shows that complex ano-scrotal fistulas can be safely managed with LIFT procedure with preserving continence and preventing chances of recurrence.*

## 1. Introduction

Fistula-in-ano can develop in approximately 40% of patients during acute phase of sepsis or even be discovered within 6 months of initial therapy<sup>1</sup>. An anal fistula is characterized by chronic purulent drainage or cyclical pain associated with abscess formation, followed by intermittent spontaneous decompression<sup>2,3</sup>. In some cases of men with anal fistulas, the fistula can extend into the scrotum, in which case the scrotum is usually painful and presents with redness, swelling and pus discharge from the external opening that is secondary scrotal orifice of the fistula. Although initially, such a presentation may be confusing with acute scrotal diseases, careful examination by palpation reveals the anal fistulous tract between the external opening into the scrotum and the internal opening (primary orifice) into the anal canal. Fistula-in-ano is considered complex if found to have any of the following characteristics: tract crossing more than 30 - 50% of external sphincter, anterior fistula in a female, presence of multiple tracts, recurrent fistula, pre-existing incontinence, local irradiation and Crohn's disease<sup>4,5</sup>.

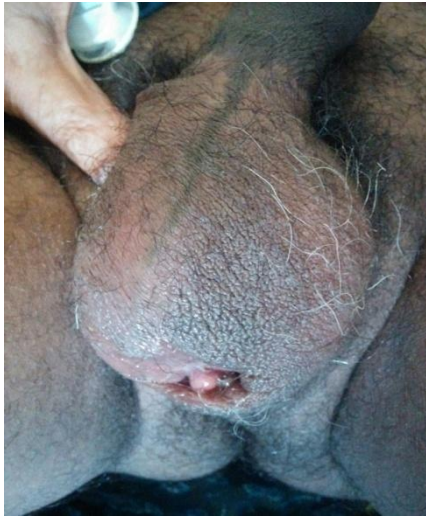
The principle of surgical management is to effectively eradicate current and recurrent septic foci, associated epithelialized tracts and preserve continence. An ideal procedure for treating a fistula in ano should be minimally invasive with minimal failure rates and morbidity. Ligation of the intersphincteric fistula tract (LIFT) has been described by Rojanasakul et al. from Thailand<sup>6</sup>.

## 2. Case Report

A 42 year old male presented with chief complaint of scanty purulent discharge from his scrotal sinuses for last 5 years and pain at the scrotum since 5 days. There was no associated history of fever, bleeding per rectum or constipation. Patient had history of discharging sinus for last five years which was intermittent and associated with episodes of swelling and spontaneous rupture, discharging pus. Patient was a known diabetic since 7 years, on oral

hypoglycaemic agents and regular follow up with the physician. There was no history of any major illnesses apart from present illness. On local examination, there was one visible external opening on the under surface of scrotum, 2cm to the left of median raphe about 12cm from the anal verge (Figure 1). A small 1\*1cm granuloma is noted on the scrotum covering the fistulous external opening. Induration was noted around both the openings over scrotum. On digital rectal examination, no internal opening was identified. Routine investigations were within normal limit. Because of its close proximity with urethra and absence of internal opening in the anus, the provisional diagnosis of urethro-cutaneous fistula was made. To confirm the diagnosis, RGU was done revealing that the tract is not opening into the urethra & fistulogram was done (Figure 2). As the fistulogram revealed a linear serpiginous blind ending tract with no communication with the anal canal, patient was advised MRI - fistulogram to know the path of fistula tract within the perineum and the internal opening as it is a chronic fistula with 5 years duration. MRI - fistulogram revealed - "a solitary long fistulous tract measuring 10cm in length & 1cm in width seen extending from the root of the penis on the left side, anteriorly reaching to the inferior part of the left scrotum, with thick inflammatory rim. Posteriorly this shows only faint communication with the anal canal on the left side between 10'clock & 2 o'clock position" (Figure 3). As the tract was already matured, the patient was posted for surgery after giving a 5 days prophylactic antibiotic course.

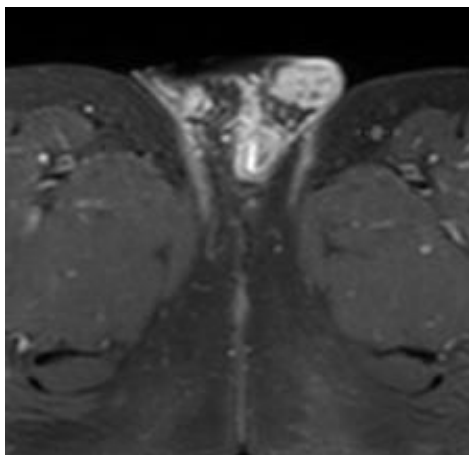
Under spinal anesthesia, patient in lithotomy position, examination under anesthesia (EUA) was done, revealing a small induration at 1 o'clock position, 3cm from anal verge. Presence of the patent fistulous tract is confirmed by passing an infant feeding tube through the fistulous opening in scrotum under spinal anaesthesia in operating room and methylene blue is injected. The dye is seen clearly exiting from the expected anal opening with little resistance, confirming the patency.



**Figure 1:** Preoperative picture with external scrotal opening



**Figure 2:** Fistulogram showing complex tract



**Figure 3:** MRI showing complex fistulous tract



**Figure 4:** Intra-op picture with inter-sphincteric tract

**Surgical procedure-** Before proceeding to the surgical procedure, a malleable probe is passed through the scrotal opening to exit from anal opening. The external scrotal opening with the overlying granuloma is marked and excised along with a 3cm of the tract. Scrotum with penis is strapped to avoid visual impairment of peri anal area where further surgery progressed. A small 2cm incision is made at 1 o'clock position and intersphincteric plane is dissected. With the probe in-situ, the inter-sphincteric portion of the tract is identified and dissected all around. The skeletonised intersphincteric tract ligated proximally and distally with absorbable chromic catgut. Intersphincteric tract was removed between the 2 sutures applied over the fistulous tract (Figure 4) close to the internal and external sphincters, followed by curetting all the granulation tissue in the rest of the fistulous tract up to the level of scrotal opening. The defect in the external sphincter muscle was sutured. Hydrogen peroxide is injected through the external opening which did not make through the internal opening, including the ligated tract after the completion of procedure and it confirmed the ligation of fistulous tract. The tract was allowed to heal by secondary intention. Spontaneous closure of tracts occurred by 5 weeks postoperatively. Patient has been under follow up for last 1 year and no recurrence observed.

### 3. Discussion

The popular Goodsall's rule is useful for predicting the anatomy of simple fistulas. It helps in predicting the trajectory of anal fistulous tract and is widely applied; however, in clinical practice, some cases are incompatible with this rule<sup>7,8</sup>. According to Goodsall's rule „if the external opening is anterior to the transverse anal line and within 3 cm. from the anal verge, the internal opening will be in straight radial line. But, if the external opening is behind the transverse line or more than 3 cms from the anal verge, the internal opening will be at the posterior midline of the anal canal<sup>9</sup>. However, long-tract anterior fistulas, and possibly fistulas with scrotal extension, are exceptions to this rule. Indeed, even if the external opening of a long anal fistula is located anterior to the transverse line, the fistulous tract may be curved to the internal opening in the posterior midline<sup>8,10</sup>.

In this case, the fistulous tract was not in accordance with the goodsall's rule, and internal opening is at 10'clock position.

The goal of management of fistulas is eliminating the inciting factor and the factors for recurrence with preservation of continence. Most anal fistulas are simple and the treatment is usually ancient fistulotomy or fistulectomy. Fistulectomy is complete excision of the fistulous tract and eliminating the risk of missing secondary tracts and providing complete tissue for histo- pathological examination. Fistulotomy lays open the fistulous tract. The recurrence rate for a complex anal fistula managed with a cutting seton is reported to be 0 to 8%, with minor and major incontinence being reported in 34 to 63% and 2 to 26% of patients, respectively. Because of the risk of a change in continence with these conventional techniques, sphincter-preserving techniques for the management of complex anal fistulae have been evaluated.<sup>11</sup> Recently different options for treating complex fistulae has come up. The three approaches are minimally invasive like filling the tract with plug or glue, obliteration of the tract with FiLaC(fistula laser closure) or VAAFT(video assisted anal fistula treatment) and ligation of the tract with LIFT or anorectal advancement flap.

In a study conducted by Yoshiro Araki et al, they concluded that anal fistulas with scrotal extension are mostly low transsphincteric or intersphincteric with anterior internal openings and also said Goodsall's rule, is applicable to anal fistulas with scrotal extension<sup>12</sup>. In this case, the anal fistula with scrotal extension is a low trans-sphincteric fistula with internal opening at 10'clock position.

A success rate of 57% to 94.4% was reported for LIFT procedure in various studies<sup>13</sup>. There is minimal tissue injury, shorter healing time, anal sphincter preservation, easy to perform surgery and prevents recurrence by eliminating the risk of fecal contamination by tract ligation. In addition to that if the fistula does not heal after LIFT, it converts trans-sphincteric to intersphincteric fistula<sup>14</sup>. Older techniques of fistulotomy, fistulectomy or seton usage is not done in our case. As this is a long complex ano-scrotal fistula, there is a high chance of sphincter damage, urethral injury and major tissue damage with conventional methods. Thus the decision of performing LIFT was undertaken. The septic focus and unhealthy epithelialised tissue are removed by LIFT procedure, promoting healing by secondary intention with development of granulation tissue. The procedure is easy to learn and perform even at basic health centre without the need for sophisticated equipment. After discharge, patient is on follow up for 1 year without any recurrence or complications.

#### 4. Conclusion

The management of complex fistula should be sphincter preserving with eradication of septic focus. The LIFT procedure is recommended in complex fistulas as it can be performed easy at low cost, with basic equipment and minimal tissue injury. Thus it appears to be safe with low morbidity.

**Conflict of interest:** none

#### References

- [1] Courtney M. Townsend, B. Mark Evers, R. Daniel Beauchamp, Kenneth L. Mattox. *Anus. Sabiston Textbook Of Surgery, The Biological Basis OF Modern Surgical Practice* 20th edition. Philadelphia, PA 19103-2899. Elsevier 2017. Page 1407
- [2] Han KS, Cho HM, Kim DH, Kim JG. Retrospective analysis of a fistula-in-ano: focus on an anal-sphincter-preserving procedure. *J Korean Soc Coloproctol.* 2007;23:403-9.
- [3] Whiteford MH, Kilkenny J, Hyman N, Buie WD, Cohen J, Orsay C, et al. Practice parameters for the treatment of perianal abscess and fistula-in-ano (revised). *Dis Colon Rectum.* 2005;48:1337-42.
- [4] Parks AG, Stitz RW. The treatment of high fistulainano. *Dis Colon Rectum.* 1976;19:487-99.
- [5] Mizrahi N, Wexner SD, Zmora O. Endorectal advancement flap: are there predictors of failure? *Dis Colon Rectum.* 2002;45:1616-21.
- [6] Rojanasakul A. LIFT procedure: a simplified technique for fistulainano. *Tech Coloproctol.* 2009;13:237-40.
- [7] Cirocco WC, Reilly JC. Challenging the predictive accuracy of Goodsall's rule for anal fistulas. *Dis Colon Rectum.* 1992 Jun;35 (6):537-42.
- [8] Shindhe PS. Management of rare, low anal anterior fistula exception to Goodsall's rule with Ksarasutra. *Anc Sci Life.* 2014 Jan-Mar;33(3):182-5.
- [9] Mallick KK, Bin N, Kamil M. Relevance of goodsall's rule in fistula. *J Pharm.* 2013;3(7):20-2.
- [10] Eisenhammer S. Long-tract anteroposterior intermuscular fistula. *Dis Colon Rectum.* 1964 Sep-Oct;7:438-40.
- [11] Song KH. New techniques for treating an anal fistula. *J Korean Soc Coloproctol.* 2012;28(1):7.
- [12] Araki Y, Kagawa R, Yasui H, Tomoi M. Rules for anal fistulas with scrotal extension. *Journal of the Anus, Rectum and Colon.* 2017 Jan 27;1(1):22-8.
- [13] Rojanasakul A, Pattanaarun J, Sahakitrungruang C, Tantiphachi K. Total anal sphincter saving technique for fistula-in-ano; the ligation of intersphincteric fistula tract. *J Med Assoc Thai.* 2007;90:581-6.
- [14] Kumar TS, Naresh G, Akther MJ. Lift procedure for long complex ano-scrotal fistula and review of literature. *Int Surg J* 2017;4:423-26.
- [15]