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Misdiagnosed case of an ano-scrotal fistula treated with partial excision of tract and Ksharasutra - A case report

Case Report

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Abstract

Anal fistula can sometimes extend to the scrotum, resulting in varied presentations that can lead to misdiagnoses such as scrotal infection, abscess, or sinus, particularly when minimal or no symptoms are present in the anus. This case report presents a 50-year-old male patient initially diagnosed with a scrotal sinus who underwent excision one year ago. He presented with persistent pus discharge from the scrotum without anal complaints. So the case was initially diagnosed as a scrotal sinus based on clinical examination and ultrasonography findings, the true pathology of an ano-scrotal fistula was only revealed during surgery. This unexpected finding was effectively managed by partial fistulectomy and Ksharasutra therapy. This case underscores the importance of thorough preoperative assessment and intraoperative vigilance. The successful outcome demonstrates the necessity for flexibility in surgical planning and the potential benefits of integrative approaches in complex fistula-in ano.

Keywords: *Anoscrotal fistula*, *Bhagandara, Fistula in ano, Ksharasutra, Thumari oil.*

Introduction

Anal fistula most commonly follows cryptoglandular infection, leading to significant distress and reduced quality of life for patients, with a reported incidence of 8.6 per 100,000 individuals.(1) The course of the fistulous tract usually follows the path of least resistance, making its trajectory often unpredictable. Ano scrotal fistulas are a rare manifestation, where the tract extends from the internal opening at the anus to the external opening at the scrotal wall. According to Goodsall's rule, tracts with an external opening more than 1.5 inches away from the anal verge typically open at the posterior midline of the anus (6 o'clock position in lithotomy).(2) However, ano scrotal fistulas often present with an internal opening at the anterior midline (12 o'clock position in lithotomy), making them an exception to this rule. High trans-sphincteric and supra-sphincteric fistulas usually have a posterior internal opening, whereas low trans-sphincteric and inter-sphincteric fistulas tend to have an anterior internal opening.(3),(4)

Patients with ano scrotal fistulae often experience pain, pus discharge, and swelling at the external opening, symptoms which can be confused with a scrotal sinus. Clinical examination and appropriate imaging studies are essential for confirming the connection to the anal canal or rectum.

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Various surgical options for treating anal fistula have their own indications and limitations. Techniques such as Ligation of Intersphincteric Tract (LIFT) and Video Assisted Anal Fistula Treatment (VAAFT) demonstrate mixed success rates. Procedures like fistulectomy are associated with high postoperative incontinence rates.(5) Despite advancements in fistula surgery, recurrence rates (7% to 50%) and postoperative complications remain significant concerns.(6),(7),(8)

Bhagandara (fistula-in-ano) is considered one of the notorious diseases and is included in *Ashtamahagada* in Ayurveda.(9) Ksharasutra therapy has been proven to be an effective treatment modality for managing anal fistula with 96.76% success rates and mentioned in Bailey and Love's short practice of surgery.(10) Ayurvedic texts also mention a wide variety of drugs and procedures (*Upakramas*) for wound healing. This case study discusses a misdiagnosed case of ano scrotal fistula, initially identified as a scrotal sinus, which was successfully managed through the integrative approach of partial excision of scrotal tract and *Ksharasutra* therapy.

Materials and methods

Case report

A 50-year-old normosthenic male who is a known case of type 2 diabetes mellitus (T2DM), under regular allopathic medications (Tab. Metformin 500mg, once daily), presented to the outpatient department. He reported experiencing pain and watery discharge from the left side scrotum for the past one year. There was no history of fever, constipation, bleeding per ano, discharge per ano, dysuria, tuberculosis, or Crohn's disease. The patient had a history of a scrotal sinus diagnosed one year prior, which was managed by

excision of the sinus tract in civil hospital. During that time, no connection to the anus was identified. Patient did not get any relief even after the surgery.

Clinical examinations

Local examination of the scrotal region revealed a single visible external opening on the surface of the left scrotum, located just lateral to the median raphe and approximately 10 cm from the anal verge. Induration was noted around the scrotal opening (Figure 1). Palpation elicited mild tenderness, and a few drops of watery discharge were observed at the external opening. Examination of the perineum showed no induration or tenderness and digital rectal examination detected no any internal opening or other abnormalities.

Investigations

All the routine haematological, complete urine routine and microscopic investigations were found with in normal limits. Ultrasonography of scrotum was done which shows-36mm long and 12mm wide sinus tract is seen in left scrotal wall with one external opening. (Figure 2)

Operative procedure

Under all aseptic precautions patient was taken in to OT with stable vitals and foley's catheter number 16 in-situ. After spinal anaesthesia the patient was kept in supine position. Operative site was painted with betadine solution and spirit followed by draping. Patency test was done with a mixture of betadine solution and hydrogen peroxide. After injecting approximately 5ml of the mixture, the solution came out through the external opening itself. Then probing was done through external scrotal opening and resistance was felt approximately 4cm deeper. After that elliptical incision was made with blade no.15 around the external opening followed by cautery dissection along the sinus tract. Layer-by-layer dissection was carried out and the fibrosed portion of sinus tract was excised. Then it was found that the remaining tract was traveling towards the perineum.

Hence, after excising the fibrosed tissues under vision, the patient was positioned into lithotomy position. Patency test was done at this point and it was observed that the solution came out through internal opening at 12 o'clock, behind the dentate line in anal canal. Retrograde probing was done and the ano scrotal fistulous tract was established without injuring to the urethra. At this point the diagnosis was changed to anterior low trans-sphincteric anal fistula with scrotal extension. Wound at the scrotum was further extended up to the perinium and Barbour linen no.20 thread application was done in the tract as primary threading (Figure 3). Complete haemostasis was achieved. Wound was packed with gauze pieces soaked in betadine. Patient was stable during the procedure.

Results

Follow-up and outcome

Post operatively intravenous antibiotics and analgesics were administered for 3 days and then shifted to oral antibiotics and analgesics for the next 5 days. Regular wound care was done with betadine and *Thumari taila* (medicated oil prepared with *Securinega leucopyrus*) from the first post operative day till complete healing. Ayurvedic medicines started after the course of antibiotic therapy till completion of treatment (Table 2).

Barbour linen thread was replaced with *Apamarga Ksharasutra* on the seventh day. Fresh *Ksharasutra* was applied on 7 days interval by railroad technique. Gradually the wound became healthy and smooth healing was observed (Table 3). Complete healing was observed in 59 days (Table -1). Patient is on regular follow up and no recurrence was observed till date (6 months).

Timeline

Details of therapeutic intervention, follow up and outcome and timeline of events have been summarized in table 1,2, and 3 respectively.

Table 1: Timeline of events

Day	Events
6/2/24 (pre-operative day)	First visit to OPD Shalya Tantra Diagnosed as a scrotal sinus. Pre-anaesthetic checkup done
7/2/24 (day of operation)	Excision of tract done Ano-scrotal fistula was identified intraoperatively.
08/02/2024	Regular wound dressing done
14/02/2024 (Post operative	Barbour linen thread was replaced with *Ksharasutra* and changed at weekly
20/3/24 (Post operative	Cut through of the tract was achieved
06/04/2024	Complete healing of wound

Table 2: Therapeutic interventions

Day	Intervention
7/2/24 (day of operation)	1. Inj. Taximax 1.5gm intra venously, 12 hourly - 3 days 2. Inj. Ranitidine 2 ml intra venously
11/2/24 (day 4)	Stopped 1,2,3 4. Tab. Cefixime 200 mg, orally, 12 hourly for 5 days 5. Tab Aceclofenac (100mg), Paracetamol
15/2/24 (day 8)	Stopped 4,5 Continued 6 7. Tab. *Triphala Guggulu* 500mg ,2 tablets, thrice daily
07/04/202	All medicines were stopped

Table 3: Follow up and outcome

Day	Assessment
6/2/24 (pre-	Sinus tract at left side scrotal region with watery discharge and induration at sinus tract
7/2/24 (day of	Ano-scrotal fistula was identified intraoperatively.
11/2/24 (post operative day 4)	· Soakage - present · Wound - unhealthy · Adherent slough - present · Pain - mild

15/2/24 (Post operative day 8)	· Pain - mild · Soakage - present, reduced · Wound - unhealthy · Slough - present, reduced · Pus - present (Figure 4)
29/2/24 (day 22)	· Soakage: mild · Wound: healthy · Slough: absent · Discharge: mild, serous · Pus: absent
07/04/2024	· Completely healed wound (Figure 5)
07/7/24 (3 month	· No recurrence

Figures

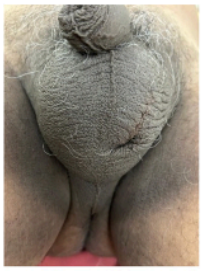

Figure 1: Preoperative image

Figure 2: USG findings

Figure 3: Post operative image

Figure 4: Post operative day 8

Figure 5: Completely healed wound

Discussion

Scrotal sinus excision can typically be performed safely under local anaesthesia, but in this case spinal anaesthesia was chosen. This decision was made due to the recurrence of the condition and the possibility of an unapproached branch remaining from the previous surgery conducted one year prior or the possibility of extension into the perineum or anal canal.

The initial patency test performed through the scrotal opening failed to establish a connection between the tract and the anal canal. This was likely due to fibrosis identified during a layer-by-layer dissection of the scrotal wall in direction of the sinus tract. A subsequent patency test, conducted after identifying the tract distal to the fibrotic area, revealed that the solution emerged through a tiny internal opening into the anal canal. This finding confirmed the diagnosis of an ano-scrotal fistula.

The tract was traced as extending downward between the dartos muscle and the external spermatic fascia in the scrotum, passing through Colle's fascia in the perineum, and ultimately connecting to the anal canal at dentate line (12 o' clock position in lithotomy). (11) The patient had not reported any anorectal complaints since the onset of pus discharge from the scrotum. Upon reaching Colle's fascia, which consists of loose connective tissue, the cryptoglandular infection likely spread rapidly towards the scrotum or vice versa. However, the patient reported that the initial complaints originated in the scrotum, for which he had previously undergone excision of the sinus tract. Post-excision, the patient experienced no relief, and the sinus recurred. This suggests the possibility that a portion of the sinus tract may have been left unexcised, potentially extending toward the perianal region. The intraoperative findings of fibrosis may have served as a barrier, preventing the infection from spreading from the scrotum to the anal canal. The lack of significant pus discharge or associated anorectal symptoms, as compared to the scrotal sinus, might have caused the patient to overlook the anorectal aspect of the condition. Hence this was diagnosed as a case of ano-scrotal fistula of non-cryptoglandular infection..

Partial lay open of the tract up to the perineum provided access to the infected tract for proper cleaning during the postoperative period. After establishing the connection with the anal canal, the condition was treated as an anal fistula with scrotal extension.

Magnetic Resonance Imaging is considered as the gold standard in diagnosis of complex or recurrence fistula. Ultrasonography (USG) of the scrotum was chosen here as a simple and cost-effective imaging technique, although it is often operator-dependent.(12) Based on the presenting complaints, history, clinical examination, and the patient's economic status, USG was advised. However, an MRI or contrast-enhanced CT scan could have provided a more accurate preoperative diagnosis.

Ksharasutra therapy, a time-tested treatment modality with a high success rate, was employed. It facilitated simultaneous cutting and curettage of the tract and healing of tract, thereby minimizing sepsis. *Thumari* oil (*S. leucopyrus*) is a proven medicated oil for wound healing. Its *Kashaya rasa* (astringent taste) helps reduce discharge from the wound and promotes cleaning due to its *Stambana* (styptic therapy) and *Sodhana* (cleansing) properties. The high tannin and calcium oxalate content in *Thumari* oil accelerates the wound healing process. Additionally, its free radical scavenging activity, antibacterial, anti-inflammatory, and immunomodulatory properties contributed to reducing infection, promoting wound healing, and facilitating granulation tissue growth.(13) *Triphala guggulu* (Ingredients: *Terminalia chebula* Retz., *Terminalia bellerica* Roxb., *Emblica officinalis* Gaetrn., *Piper longum* L.) and exudate of plant *Guggulu* (*Commiphora mukul* Hook.), an Ayurvedic polyherbal combination, was administered to minimize infection due to its anti-hyaluronidase activity.(14)

Guda is the site of *Apanavata*,(one of the five subtypes of *Vāta* (*Vāyu*), situated in the pelvic region) and *Anulomana* (mild purgative action) is the preferred treatment for correcting *Apanavata vaigunya* (impairment of *Vata*). *Erandabrushta Hareetaki*

(ingredients: *Ricinus communis, Terminalia chebula Retz.*) was administered to the patient to promote *Apanavata anulomana* (proper functioning of *Vata*). This treatment aims to enhance the digestion of undigested food materials, facilitate the achievement of a soft stool consistency, and ensure smooth evacuation. (15) Instead of using drugs with *Virecana* (therapeutic purgation) properties, which could alter stool consistency to a liquid form and potentially cause stool particles to lodge in the fistulous tract, leading to increased sepsis, *Anulomana* (mild purgative action) drugs were chosen.

Frequent hospital visits can be seen as a drawback of this case report. Alternative techniques, such as Interception of fistulous tract with the application of *Ksharasutra* (IFTAK), might have resulted in a shorter healing time. However, the fistulous connection from the scrotum to the anus was identified only during surgery. Given this discovery and the surgeon's preference, partial lay opening of the tract combined with *Ksharasutra* application was selected and found good recovery and complete cure without recurrence.

Conclusion

A patient initially diagnosed with a scrotal sinus, confirmed by ultrasonography (USG), was found to have an ano-scrotal fistula based on intraoperative findings. The condition was successfully managed through partial lay open of the tract followed by *Ksharasutra* therapy. This case study highlights the importance of intraoperative findings over preoperative imaging in determining the final diagnosis and surgical plan. It emphasizes that while imaging studies are valuable, surgeons should prioritize intraoperative observations and consider probable differential diagnoses when planning surgery.

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