Case report

AN ATYPICAL CASE OF PILONIDAL SINUS IN THE PERIANAL REGION

ABSTRACT

Aim: This case report aims to describe the clinical presentation, diagnostic approach, and surgical management of a perianal pilonidal sinus complicated by multidrug-resistant bacterial infection, emphasizing the importance of microbiological profiling and individualized treatment.

Presentation of Case: A 27-year-old male presented with a progressively enlarging, tender perianal swelling with purulent discharge and foul smelling. Physical examination revealed a ruptured sinus with seropurulent discharge. Microbiological culture identified *Klebsiella* species resistant to beta-lactams and fluoroquinolones, while sensitive to aminoglycosides and carbapenems. High-resolution ultrasonography (HRUS) confirmed a sinus tract extending to the presacral fascia with hair fragments. The patient underwent wide local excision with methylene blue tract delineation followed by secondary wound closure due to postoperative reinfection. Pharmacological therapy included intravenous gentamicin and meropenem for infection control, along with analgesics for pain management.

Discussion: Pilonidal sinus disease (PSD) is a chronic inflammatory condition, typically affecting the sacrococcygeal region, with rare perianal involvement. The condition is often complicated by secondary bacterial infections, emphasizing the need for culture-guided antibiotic therapy. Wide local excision with elliptical incision and tension-free secondary closure remains the preferred treatment for recurrent or complicated cases. Postoperative strategies, including wound hygiene and negative pressure wound therapy (NPWT), can further minimize recurrence risk.

Conclusion: This case underscores the significance of early diagnosis, culture-directed antimicrobial therapy, and definitive surgical excision in the management of perianal pilonidal sinus complicated by multidrug-resistant infection. A multidisciplinary approach with precise surgical planning can ensure optimal patient outcomes with minimal recurrence.

Keywords:*pilonidal sinus disease, perianal sinus, wide local excision,*Klebsiella *infection, multidrug resistance, secondary wound closure, negative pressure wound therapy, surgical management*

1.INTRODUCTION

There are about 26 cases of pilonidal sinus for every 100,000 people. The prevalence of pilonidal sinus is 3–4 times higher in men. It occurs typically between the ages of 15 and 30; in rare cases, the illness manifests before puberty or after the age of 60[1]. Pilonidal cyst or pilonidal sinus disease (psd) is a reoccurring skin disorder that typically affects men and people with thick body hair. It causes a cyst or abscess in the crease between the buttocks

[2]. Hair can be forced into the skin by friction and pressure from rubbing the skin, wearing tight clothing, riding a bike, or sitting for extended periods of time. In order to push the hair out, the body forms a cyst around it.Most pilonidal cysts originates on the tailbone [3]. Obesity, inactivity, and sitting for long periods raise the risk of acquiring the condition [2].A pilonidal cyst is generally asymptomatic. However, if the cyst is infected, the skin around it may swell and cause pain. Symptoms of an infected pilonidal cyst may include a pit near the buttock crease, pain, inflamed and swollen skin, pus or blood leaking through a hole in the skin, draining pus will cause an odor[3]. The management of pilonidal cyst includes conservative therapy(warm compresses, hair removal), pharmacological therapy(antibiotics), surgical therapies(incision & drainage, excision & primary closure, excision with flap reconstruction, wide excision & open healing), minimally invasive techniques (laser hair removal, phenol injection) and postoperative care (wound care, follow-up). Here we focused to illustrate a case of 27 year old male who was diagnosed with perianal pilonidal sinus.

2. PRESENTATION OF CASE

A 27 year old male patient who was apparently alright one and a half month back; noticed a swelling in the perianal region of size 1×1 cm, which was insidious in onset and gradually progressive in nature. The patient then one month back had rupture of swelling and resulted in the discharge from swelling. Patient then consulted to a local hospital where medications were given.

On local examination,

Ruptured sinus 2×1 cm present in the perianal area, foul smelling and discharge was present.

Physical and systemic examination, along with laboratory investigations were done and analysed. Hb-13.4g/dl, Platelets- 3.67 Lakhs/cumm, HCT- 40.2%, RBS-95 mg/dl, Creatinine-0.8mg/dl , Sodium- 137.9mmol/L , Potassium- 4.38mmol/L, Chloride- 104.4mmol/L , MCV-83.8 fl, MCH-26.4 pg , Total bilirubin-0.6mg/dl , Direct bilirubin- 0.2mg/dl, Indirect bilirubin-0.46mg/dl, Total protein- 7.2g/dl, Albumin-4.7g/dl, Globulin-3.1g/dl,

Abnormal laboratory investigations,

TLC -12430 cells/cumm, ESR- 25 mm/hr

TABLE-1: CULTURE

Culture and sensitivity	
Sample	Pus
Organism isolated	Klebsiella species
Antibiotic sensitivity	
Amoxicillin-clavulanate	Resistant
Ampicillin	Resistant
Amikacin	**Sensitive**
Cefotaxime	Resistant
Ceftriaxone	Resistant
Ceftriaxone-sulbactam	Resistant
Ciprofloxacin	Resistant
Gentamicin	**Sensitive**
Imipenem	**Sensitive**
Levofloxacin	Resistant
Meropenem	**Sensitive**
Tetracycline	Resistant

INVESTIGATIVE PROCEDURE

High Resolution Ultrasonography of Gluteal Region- relatively ill-defined collection with irregular marigin and few linear echogenic foci, possibly hair follicles seen in inter gluteal region measuring 0.8 ×1.6× 1.5 cm with sinus tract extending orderly from skin surface to the length of 1.4cm likely pilonidal sinus, visualized vascular structure appear normal.

THERAPEUTIC PROCEDURE

Surgical Therapy

Wide local excision was the procedure performed to cure the pilonidal sinus in which the lesion or abnormal tissue along with a margin of healthy tissue surrounding it was removed to reduce the risk of recurrence. Once the lesion's size, depth, and location was clearly evaluated the patient was laid in the prone position; Methylene blue dye was injected into sinus followed by an elliptical incision was made around the sinus. The incision extends down to the presacral fascia or deep enough to remove all inflamed and infected tissues. The entire sinus tract, including secondary tracts or abscess cavities. The wound is left open to heal by secondary intention, often packed with dressings to promote granulation and reduce the risk of recurrence. The patient got reinfected hence had been admitted for secondary suturing.The wound was closed using interrupted or tension-free sutures and with drainage tubes to prevent fluid accumulation. Patient was advised on wound care, hygiene, and follow-up.

Pharmacological Therapy

The patient was administered with antibiotics to prevent the infection and analgesics were given for pain management;

Inj.Gentamicin 80mg [1-0-1]
Inj.Meromac 1g [1-1-1]
Inj.Divon AQ 75mg [1-0-1]
Inj.Pantodac 40mg [1-0-1]
Tab.Rutomor D [1-0-1]
Tab.Limcee 500mg [1-0-1]

3. DISCUSSION

Pilonidal sinus is typically characterized by an abscess or a painful sinus tract that discharges continuously. Regardless of how the ailment manifests, its painful nature results in substantial morbidity, frequently accompanied by a prolonged loss of normal activities. The ideal treatment would be a speedy recovery that would enable patients to resume their regular activities as soon as possible, with little chance of complications and little morbidity [4]. Aggarwal K et al. presented the case of pilonidal sinus arose in the intersphincteric area in the anal canal [5,6].In this case, the pilonidal sinus was found in the perianal region without involvement of the sphincter muscles. Doll D et al. reported that when the anal canal was opened in their case, they encountered a very small amount of hair under the anal mucosa and submucosa which was similar to our case [7]. On the other hand, OzlemZelihaSert outlined that there was a risk of developing anal fistula, as well [5].

The most common treatment for pilonidal disease involves surgical excision followed by open wound healing.Wide local excision is a surgical procedure used to treat pilonidal sinus, particularly in recurrent or complicated cases. It involves the complete removal of the sinus tract and surrounding tissue to ensure all affected areas are excised, reducing the risk of recurrence. Indications are recurrent pilonidal sinus, chronic or complicated pilonidal disease with multiple sinus tracts, and presence of abscesses or secondary infections.

Negative pressure wound therapy (NPWT) is a procedure that uses vacuum technology to remove excess fluids, bacteria, and debris from a wound while stimulating the development of new tissues, promoting healing, and lowering the risk of infections.NPWT stands for wound healing technology, which consists of three primary components: a wound dressing, coverings, and a pump. Wound dressing helps to transfer pressure from the pump to the wound itself, and current NPWT commonly uses reticulated open-pore polyurethane foam to equalize negative pressure across the entire wound surface. NPWT is increasingly being utilized on closed incisional wounds as a prophylactic approach to avoid surgical site problems[2,8].

4. CONCLUSION

This case report highlights the successful management of pilonidal sinus through timely diagnosis, appropriate surgical intervention, and comprehensive postoperative care. By employing wide local excision and ensuring meticulous wound management, we achieved complete resolution of symptoms with no recurrence observed during follow-up. The case underscores the importance of individualized treatment approaches, to minimize recurrence and enhance recovery. Advances in surgical techniques, combined with patient-centered care, offer promising outcomes for this common yet challenging condition. This report contributes to the growing evidence that effective management of pilonidal sinus can significantly improve patient quality of life and prevent complications.

COMPETING INTERESTS

Authors have declared that no competing interests exist

CONSENT

The patient addressed in this case report has provided consent for publishing, acknowledging the report's nature and understanding that their identity will be kept confidential.

REFERENCES

1. Pilonidal Cyst and Sinus: Background, Pathophysiology, Epidemiology. eMedicine [Internet]. 2019 Nov 12
2. Kansal R, Garg A, Arora B, Singh C, Malhotra K, Mehta M, et al. Wide Local Excision of Complex or Infected Pilonidal Sinus Followed by Negative Pressure Wound Therapy: Does It Enhance Wound Healing? Cureus. 2023 Oct 31;
3. Pilonidal cyst - Symptoms and causes [Internet]. Mayo Clinic.
4. McCallum IJD, King PM, Bruce J. Healing by primary closure versus open healing after surgery for pilonidal sinus: systematic review and meta-analysis. BMJ. 2008 Apr 7;336(7649):868–71.
5. OzlemZelihaSert. Pilonidal sinus of the perianal region: Difficult to diagnose. International Journal of Surgery Case Reports [Internet]. 2020 Jan 1 [cited 2025 Jan 16];72:96–8.

6. K. Aggarwal, B.K. Jain, N. Sharma, S. Goel, Pilonidal sinus of anal canal: a possible unique diagnosis, ANZ J. Surg. 85 (9) (2015) 693–694,

7. D. Doll, V.K. Stauffer, M.M. Luedi, Intra-anal pilonidal sinus disease: a unique diagnosis possibly pointing to the occiput, ANZ J. Surg. 86 (7–8) (2016),

8. De Vries FEE, Wallert ED, Solomkin JS, Allegranzi B, Egger M, Dellinger EP, et al. A systematic review and meta-analysis including GRADE qualification of the risk of surgical site infections after prophylactic negative pressure wound therapy compared with conventional dressings in clean and contaminated surgery. Medicine. 2016 Sep;95(36):e4673.