

# Pilonidal Abscess Associated With Primary Actinomycosis

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Pilonidal disease in the sacrococcygeal region usually presents as abscesses, recurrent inflammation, cellulitis or fistula tracks. However, few reports on actinomycosis affecting pilonidal sinuses have been published. We report a case of a 25-year-old woman who presented with a pilonidal abscess who underwent surgical drainage and debridement. Pus from the pilonidal abscess was sent for microbiology, which grew *actinomyces turicensis* associated with *prevotella bivia* and *peptostreptococci*. She was treated with oral amoxicillin-clavulanate after surgical drainage for one week and recovered well. Actinomycosis associated with pilonidal abscesses, though uncommon, should be recognized and can be satisfactorily treated with a combination of surgical drainage and antibiotics.

**Keywords:** *Actinomycosis; Pilonidal abscess; Pilonidal disease; Pilonidal sinus; Actinomyces*

## INTRODUCTION

Pilonidal disease was first described in 1880 by Hodges [1] and is derived from the Latin words *pilus*, which means hair, and *nidus*, which means nest. Pilonidal disease is postulated to be an acquired pathology and forms a sinus or cyst [2]. The sinus develops as a result of accumulation of hair and debris within the skin or hair follicles, aided by a negative pressure drawing more hair into the sinus. As inflammation and oedema occur as a result of the trapped hair and keratin, a cyst and eventually an abscess are formed. Bacteriology in an infected pilonidal sinus is commonly polymicrobial with both aerobic and anaerobic bacteria growths [3]. However, actinomycosis of pilonidal abscesses is rare. We present an unusual case of a pilonidal abscess associated with actinomycosis in a female patient who was not immunocompromised.

## CASE REPORT

A 25-year-old Indian woman with a past medical history of childhood asthma and migraine headaches was admitted to the General Surgical Service for a painful swelling over her sacral region of one week's duration. This was associated with fever, chills and rigors. Physical examination revealed a hirsute lady, with a 4-cm by 8-cm lump with erythematous skin changes overlying the sacrococcygeal region with a discharging sinus in the midline 6 cm from the anal verge. Investigations revealed leukocytosis of  $14.9 \times 10^9/L$  with a raised C-reactive protein of 104.0 mg/L. A clinical diagnosis of pilonidal abscess was made, and the patient was started on intravenous amoxicillin-clavulanate and underwent an incision and drainage of the pilonidal abscess under general anesthesia.

Intraoperative findings revealed a 5-cm by 6-cm pilonidal abscess with a communicating inferior pit of 3 cm from the main abscess cavity. The abscess did not breach the sacral fascia, and there was no communication with the rectal canal. Frank, yellow pus, 50 mL, was evacuated from the abscess cavity and sent for culture and sensitivity. No obvious 'sulphur granules' were noted. Postoperatively, the patient recovered well without any complications, and she was discharged with oral amoxicillin-clavulanate for 1 week. Pus from the abscess grew *Actinomyces turicensis* sensitive to penicillin, as well as *Prevotella bivia* and *Peptostreptococcus* species. She was followed up in the clinic two weeks after surgery with a clean, granulating wound.

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## DISCUSSION

Pilonidal disease, which was commonly seen amongst American soldiers who had sat on long bumpy rides during World War II, was known then as “Jeep seat disease” [4]. Identified risk factors of pilonidal disease include hirsutism, male gender, obesity, poor hygiene, family history, and sedentary activity such as prolonged periods of sitting [5]. Patients with pilonidal disease typically present with an acute abscess above the natal cleft or with asymptomatic midline sinus pits at the sacrococcygeal region. Hair within the abscess cavity can be found in about one-third of women and two-thirds of men with pilonidal abscesses [6]. Diagnosis is made by clinical examination, with midline pits at the natal cleft being a distinguishing feature.

Bacteriology of pilonidal abscesses includes both aerobic and anaerobic bacteria and is typically polymicrobial. Anaerobic bacteria growth is predominant, with gram-negative aerobic bacteria being more common as these are part of the normal gastrointestinal flora. Actinomycosis of pilonidal sinuses, however, is relatively rare. It was first described by Reichman [7] in 1947 and then by Anscombe and Hofmeyr [8] in 1954.

Actinomycosis is caused by actinomycetes, a gram-positive, microaerophilic bacterium that is part of the normal gastrointestinal flora. This infection commonly occurs in the cervicofacial, thoracic and abdominopelvic regions [9]. It is almost always polymicrobial, as it requires bacterial infection to convert the aerobic microenvironment to an anaerobic one, in which actinomycetes can then migrate and infect the inflamed tissue. Yellow ‘sulphur granules’, which are composed of internal tangles of mycelial fragments and a rosette of peripheral clubs stabilized by a protein-polysaccharide complex, are sometimes seen macroscopically [10]. Microscopic findings reveal filamentous gram-positive fungal-like organisms. *Actinomyces israelii* is by far the most common species affecting humans, but other species like *A. meyeri* and *A. turicensis* have been identified in recent years [9]. *A. turicensis*, first identified in 1995 [11], has been described as a potent pathogen in genital, urinary tract and skin-related infections, is typically sensitive to penicillin, and has high resistance to metronidazole and ciprofloxacin [12]. Only two cases of pilonidal cysts with actinomycosis by *A. turicensis* have been reported since the isolation of *A. turicensis* in 1995 [12]. Primary perianal actinomycosis, while rare, has also been described [13, 14]. However, not all cases presented with classic ‘sulphur granules’ from the drained pus [13].

Treatment for pilonidal abscesses should include a combination of surgery and antibiotics. However, the optimal duration of antibiotic treatment is not known, and the duration should be guided by clinical parameters and regular inspection of the wound. Patients with actinomycosis typically require prolonged antibiotic treatment with penicillin G or amoxicillin, but in patients with optimal surgical excision of infected tissues, it has been reported that the duration can be reduced to 3 months [9]. Previous cases of perianal actinomycosis have reported a 2-week duration with

satisfactory outcomes [14]. In our patient, we opted to perform an incision through the abscess, including the midline pits with curettage, drainage, and lavage of the abscess, combined with one week of oral amoxicillin-clavulanate.

In conclusion, actinomycosis of pilonidal cysts is a rare infection, which is often diagnosed postoperatively. Bacterial cultures are important to obtain a diagnosis and to guide antibiotic therapy. However, it can be successfully managed with a combination of surgical excision and debridement with an appropriate duration of antibiotics therapy. Surgeons should be aware of a possible diagnosis of actinomycosis, especially when drainage of the abscess reveals the typical ‘sulphur granules’, and should institute appropriate treatment with antibiotics.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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