EUROPEAN JOURNAL OF BIOMEDICAL AND PHARMACEUTICAL SCIENCES
http://www.ejbps.com

ISSN 2349-8870
Volume: 12
Issue: 10
Year: 2025

# CASE REPORT: RECURRENT PELVIC ABSCESS FOLLOWING PELVIC SURGERY DUE TO *ACTINOMYCES* INFECTION, A HIDDEN CULPRIT

**Fariha Tahir*, Shilpy Agarwal, Ali Nakash**

United_Kingdom.

***Corresponding Author: Fariha Tahir**
United_Kingdom.

**DOI:** https://doi.org/10.5281/zenodo.17310656

**Article Received on 26/08/2025** **Article Revised on 16/09/2025** **Article Accepted on 06/10/2025**

## ABSTRACT

**Background: Actinomycosis** is a slow-growing infection caused by *Actinomyces* bacteria. These bacteria normally live in the mouth and female reproductive tract without causing harm. *Actinomyces.*[1] It is a Gram-positive, microaerophilic or obligately anaerobic, rod-shaped bacterium that is part of the indigenous flora of the human oral cavity and the female genital tract. But if the protective lining of these areas is damaged, the bacteria can enter deeper tissues, leading to abscesses and firm lumps. The infection spreads slowly, often forming tunnels (sinus tracts) that reach nearby organs [Citation1]. It most often affects the face and neck, followed by the abdomen and chest [Citation2]. Although once thought to rarely involve the reproductive system, recent studies show pelvic actinomycosis—especially in women—is more common than previously believed [Citation2]. *Schaalia radingae*, formerly known as *Actinomyces radingae*, is a facultative anaerobic, Gram-positive, rod-shaped bacterium. In this case study we presents the rare case of a young woman presented with recurrent pelvic abscess after a pelvic surgery for dermoid cyst.

## CASE REPORT

### Background

A 24-year-old woman came to the A&E with intense lower abdominal pain, repeated vomiting, and a high fever. She was clearly unwell and showed signs of sepsis. What made her presentation more concerning was her recent history as a month earlier, she had undergone a laparoscopy for a right ovarian cyst and an endometrial biopsy.

Her histology had shown a benign dermoid cyst, but the endometrial biopsy revealed atypical hyperplasia, a finding that had understandably raised concern and put her under close follow-up.

### First Admission: The Infection That Wouldn't Settle

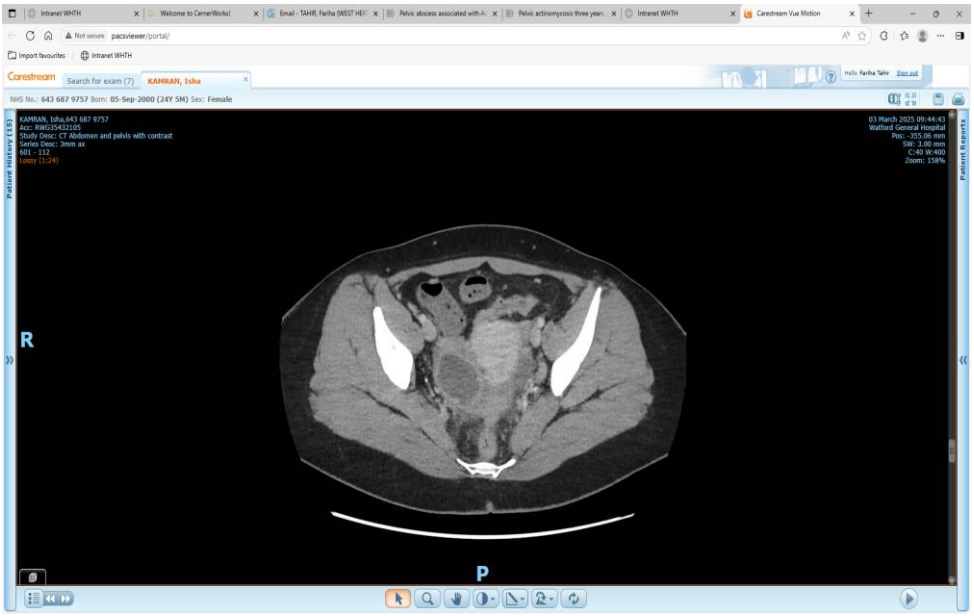
On examination and blood work, she was febrile and septic. An urgent pelvic ultrasound showed a large 57 × 52 mm cyst in the right ovary and fluid collecting in the pouch of Douglas — a sign that infection or inflammation was likely brewing in her pelvis.

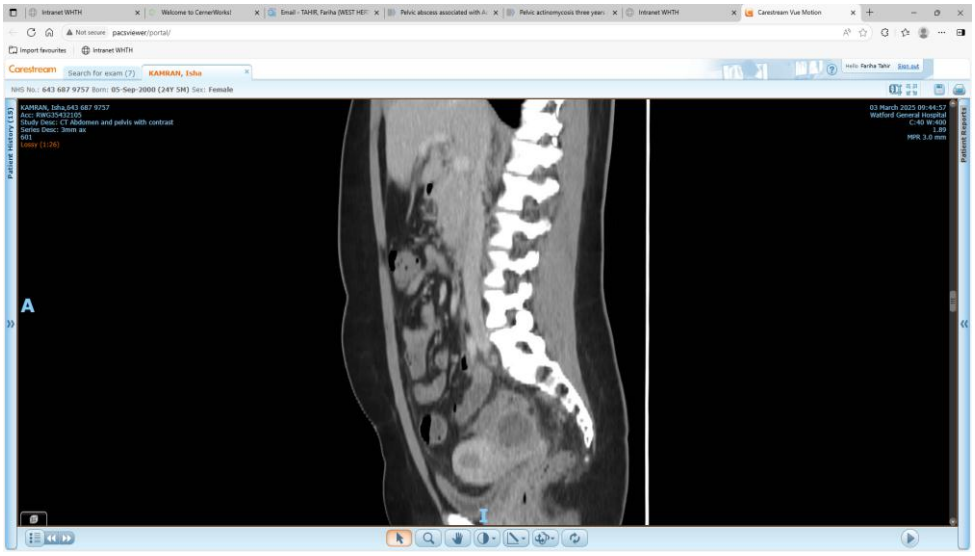
She was started on intravenous antibiotics right away. However, despite treatment, her fever persisted. A CT scan done two days later revealed, a right ovarian abscess. It also showed inflammation around the appendix, raising the possibility of concurrent appendicitis or secondary inflammation.

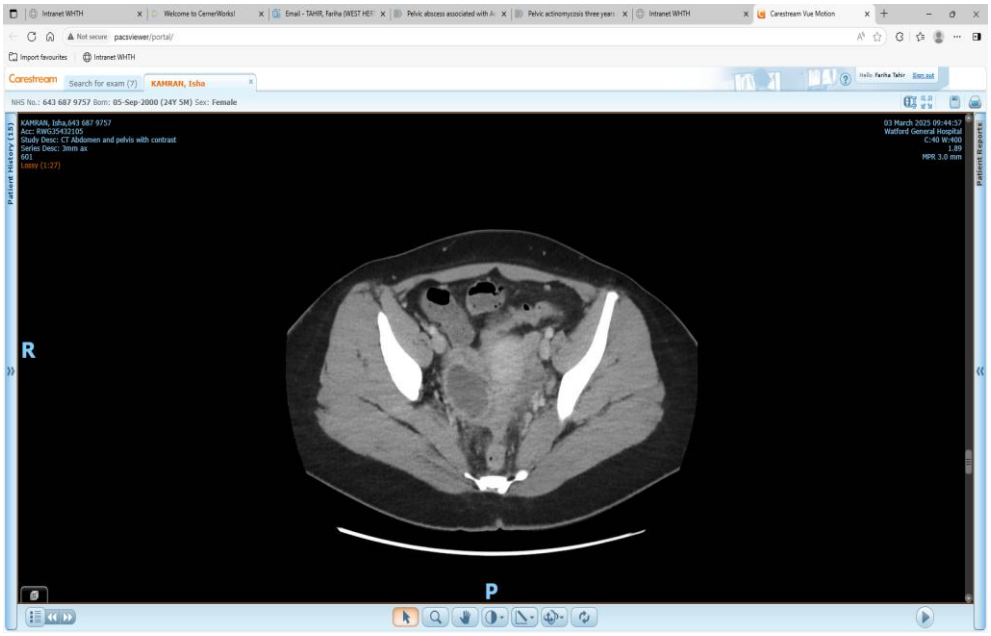
The decision was made to proceed with surgery. During laparoscopy, the findings were complex:

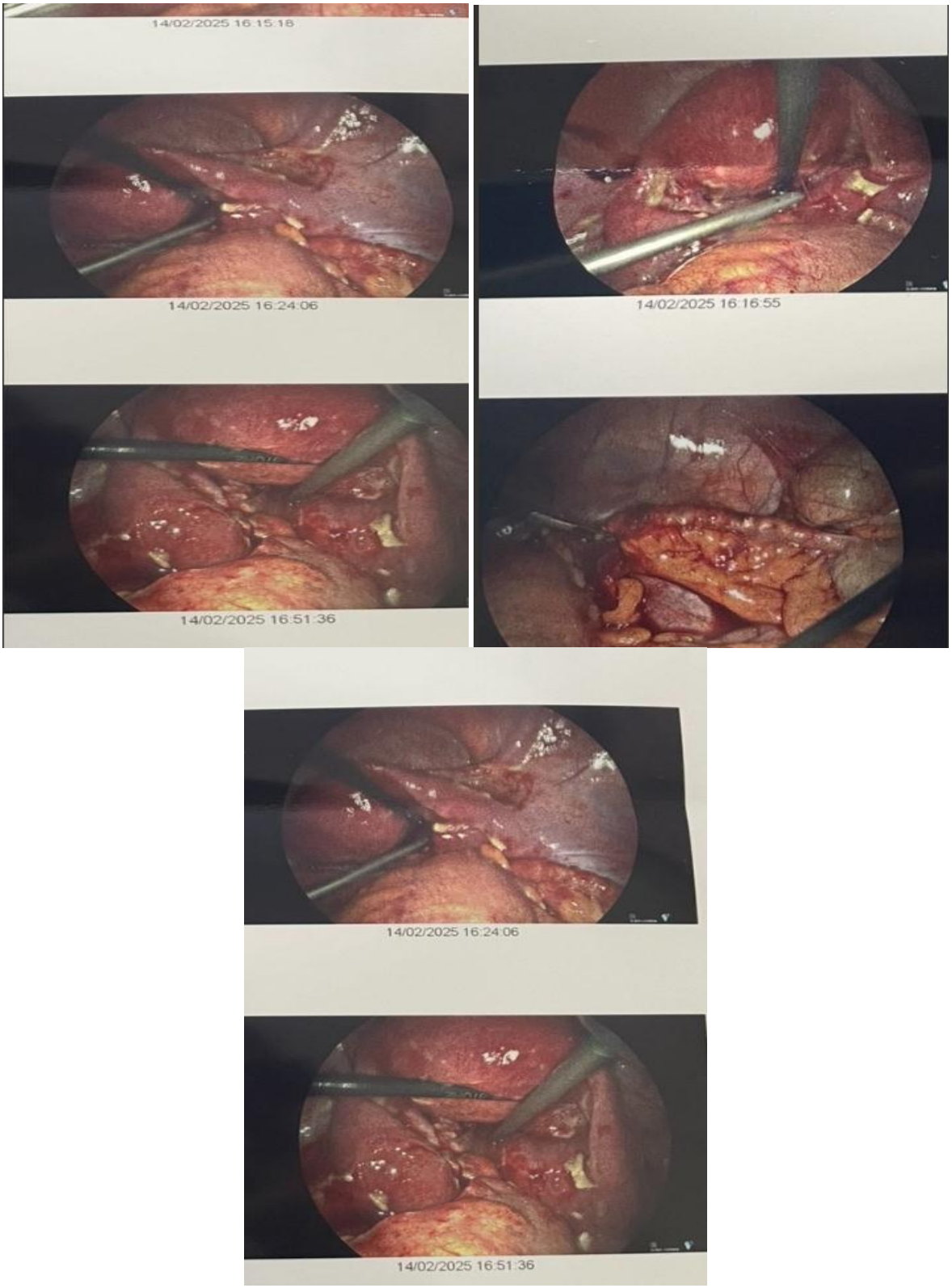
- The right ovary was difficult to visualise, likely due to inflammation or adhesion.
- The left fallopian tube was grossly swollen, and the left ovary was buried in pelvic adhesions.
- Pus was seen in the rectouterine pouch, and both adnexa were coated in fibrin.

An extensive abdominal washout was performed. The appendix was removed, and a drain was left in the pelvis. Pus samples were sent for microbiology. She was kept on broad-spectrum antibiotics and monitored closely.


R
P


A
I


R
P




**A Rocky Recovery**

Despite the surgery, her fevers lingered. A repeat pelvic ultrasound five days later showed a smaller but persistent abscess on the right ovary. It also revealed something new, a mixed cystic and solid area nearby, raising suspicion for a developing or unresolved process/abcess. Initial cultures showed Gram-negative bacteria, but oddly, all her blood cultures remained negative. Clinically improving but still under observation, she was eventually discharged home on oral antibiotics.

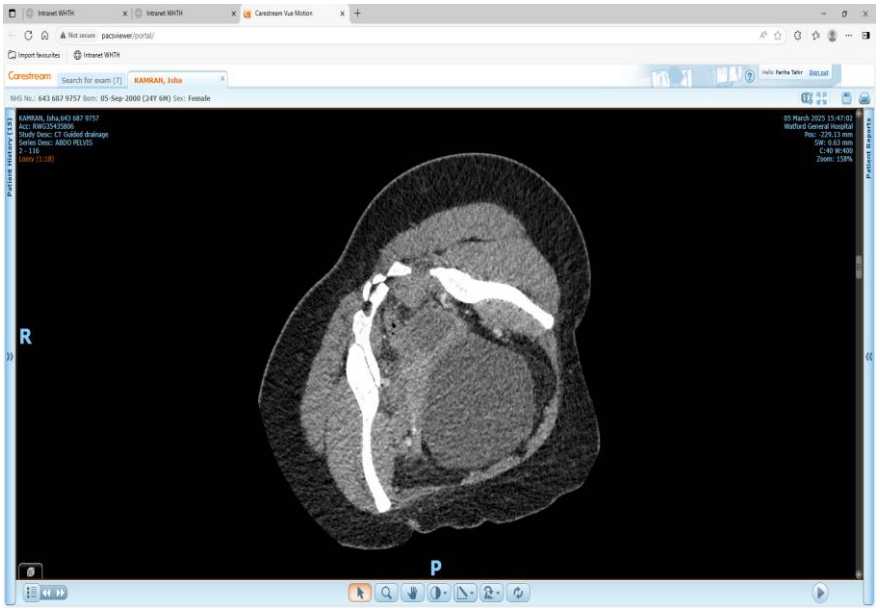
**Second Admission: When the Fever Returned**

Two weeks later, she was back this time with sharp, localised pain in the right lower abdomen, vomiting, and spiking fevers.

A repeat CT scan confirmed that there was a right ovarian abscess that returned, now measuring around 44 × 32 × 34 mm. There were also mildly enlarged inguinal lymph nodes, likely reactive.

This time, the team involved microbiology early. It was clear that conventional treatment wasn't enough. A plan was made for interventional radiology to drain the abscess under image guidance. The procedure went smoothly,

15mL frank pus aspirated - sample sent for culture and the pus was again sent for culture.




This time, the culture result was unexpected it grew ***Actinomyces radingae***, a rare species of Actinomyces. These bacteria are not common pathogens but are known to cause chronic, smouldering pelvic infections, especially in women with recent pelvic surgery or mucosal disruption.

Interestingly, her blood cultures throughout both admissions remained negative, consistent with the often indolent and localised nature of actinomycosis.

**Recovery and Reflection**

With a firm microbiological diagnosis, the patient was started on targeted antibiotic therapy. Over the following weeks, her symptoms resolved, and she continued to improve steadily with outpatient follow-up.

This case was a strong reminder to the treating team that not all pelvic abscesses behave the same. While Gram-negative and anaerobic organisms are common, persistent or recurrent infections especially in women with recent pelvic procedures should prompt consideration of atypical pathogens like *Actinomyces*.

**Lessons Learned**

- **Persistent fever** despite antibiotics and surgery warrants **re-evaluation**, repeat imaging confirmed the abcess, and possible drainage was needed due to fever/infection.
- Always consider **atypical organisms** in recurrent pelvic infections, particularly in patients with recent surgery or instrumentation.
- Multidisciplinary care involving radiology, microbiology, gynaecology, and surgery was key to this patient's recovery.
- *Actinomyces radingae* is rare, but as this case shows, it can be a hidden cause of chronic pelvic sepsis.

**DISCUSSION**

Although *Actinomyces* bacteria are normally harmless residents of the body commonly found in places like the mouth, gut, and female reproductive tract they can become opportunistic troublemakers when the normal barriers are broken. This can happen after surgery, trauma, or in people with weakened immune systems. Once they slip past the mucosal lining, they can settle deep into tissues, often with help from other bacteria, and trigger slow-growing but stubborn infections. This helps explain how a typically harmless organism like *Actinomyces radingae* ended up causing a deep pelvic abscess in this patient following recent gynaecological surgery.

In our patient's case, the infection primarily involved the ovaries, suggesting that the recent gynaecological surgery may have played a key role in allowing *Actinomyces* to take hold. It's likely that the procedure disrupted the normal mucosal barriers, creating a pathway for these normally harmless bacteria to ascend through the reproductive tract. From there, the infection

appears to have spread through the fallopian tubes and into the ovaries, ultimately leading to significant inflammation and damage to the ovarian tissue

Pelvic actinomycosis is an uncommon but important cause of recurrent pelvic abscesses, especially in women with prior pelvic surgery or intrauterine device (IUD) use. The diagnosis is often delayed due to its indolent course and nonspecific imaging features. Identification typically relies on histopathology and anaerobic cultures. Long-term antibiotic therapy is essential to prevent recurrence.

While many cases of pelvic actinomycosis in women have been linked to intrauterine devices (IUDs) accounting for approximately 20% of reported cases, this case draws attention to a less commonly recognised cause: **gynecological surgery**. In our patient, recent surgical intervention may have disrupted the natural mucosal barriers, allowing *Actinomyces* to invade and establish infection in the pelvic cavity. Similar to how a breach in the colonic mucosa can lead to abdominal actinomycosis, a post-surgical pathway may have facilitated bacterial translocation and resulted in a deep-seated adnexal infection.

Treatment of pelvic actinomycosis is often prolonged and challenging. High-dose **intravenous penicillin** is the mainstay, typically administered for at least **6 weeks**, followed by **oral therapy for up to 12 months** to reduce the risk of recurrence.[3] The duration and route of treatment depend on several factors including the size and location of the lesions, severity of symptoms, presence of abscesses or sinus tracts, and whether there has been failure of initial medical therapy. In some cases, as with our patient, **surgical or radiological intervention** may be necessary to achieve source control and guide culture-directed therapy as in our case the interventional radiology guided drainage helped.

Together with the clinical symptoms, the images often simulate those of gastrointestinal and gynecological malignancies.[3,4] These reasons render the disease undiagnosable, and 83% of cases undergo major surgical operation such as hysterectomy, salpingo-oophoerectomy, bowel resection, drainage of abscess, etc.[4] Hence, the most crucial stage of this uncommon disease is to make a correct diagnosis.

Pelvic actinomycosis typically presents with abdominal pain (85%), weight loss (44%), and foul-smelling vaginal discharge (24%). On examination, about 60% of patients have abdominal tenderness and fever. Laboratory abnormalities commonly include anaemia, leucocytosis, and an elevated erythrocyte sedimentation rate. Because these features are non-specific, pelvic actinomycosis is difficult to distinguish from tubo-ovarian or other pelvic abscesses and can also mimic pelvic malignancy, given the possibility of a solid, invasive mass and only modest leucocytosis.[5.4]

## CONCLUSION

This case underscores the need to broaden the differential diagnosis for recurrent pelvic abscesses, especially when conventional pathogens fail to respond to standard treatment. Early consideration of *Actinomyces* as a potential cause can facilitate timely diagnosis, targeted therapy, and improved outcomes. **Take-home message:** In recurrent pelvic abscesses, when conventional pathogens do not account for a persistent or relapsing course, consider actinomycosis. Seek early microbiology input, obtain material for culture, pursue drainage when feasible, and plan for prolonged, targeted antibiotic therapy.

## REFERENCES


1. BowdenGHW. Actinomyces, Propionibacterium propionicus, and Streptomyces (Chapter 34).BaronS (Ed.). 4th Edition. In: Baron's Medical Microbiology (4th edition). University of Texas Medical Branch, TX, USA (1996).
2. Mimicking uterine malignancy: Pelvic actinomycosis with giant uterine leiomyoma Changzai Li [1], Pan Zhang [2], Guimei Jiao [1], Jie Lv [1], Chunmei Ma [3], Xudong Song [4], Jinji Zhang [1], Chuntao Wu [1], Ruiwei Li [1], Hongcheng Zhu [1]
3. R Floyd, S Hunter, F Abu Saadeh, C McDonnell, P McCormick, Pelvic actinomycosis, *QJM: An International Journal of Medicine*, August 2021; 114(8): 587–588, https://doi.org/10.1093/qjmed/hcab048.
4. Fiorino AS: Intrauterine contraceptive device-associated actinomycotic abscess and Actinomyces detection on cervical smear. Obstet Gynecol, 1996; 87: 142-149. 10.1016/0029-7844(95)00350-9. **Article CAS PubMed Google Scholar.**
5. Weese WC, Smith IM. A study of 57 cases of actinomycosis over a 36-year period. A diagnostic 'failure' with good prognosis after treatment. Arch Intern Med., 1975; 135: 1562-8.
6. 6-Wang Y, Ferrero S, Li S, Liu S, Yang W. Pelvic abscess associated with Actinomyces species – a rare post-cesarean complication. Case Rep Perinat Med., Mar. 14, 2022; 11(1): 20210048. doi: 10.1515/crpm-2021-0048. PMID: 40041214; PMCID: PMC11800669.