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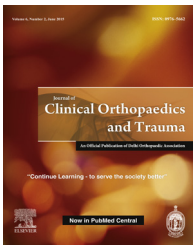


Case Report

# Forgotten intrauterine contraceptive device – A threat to total hip prosthesis: A case report with review of the literature

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ABSTRACT

Primary total hip replacement has become a routine procedure these days. With improvement in surgical techniques and implant designs, the survival rate of prosthesis has increased significantly but unfortunately, prosthetic infections though uncommon continue to be a threatening complication. We present a detailed review of the literature along with a case report of infected total hip prosthesis in a 36-year-old female who had been operated 6 years back. The causative organism was found to be *Actinomyces israelii* which was related to an infected intrauterine device used for contraception that had been forgotten after being implanted 8 years earlier.



## 1. Introduction

Periprosthetic joint infection is a persistent risk factor for the patients after arthroplasty because the host–prosthesis interface presents as a self-perpetuating enlarging immunocompromised fibroinflammatory area that is more susceptible to bacterial infection.[1] The occurrence of periprosthetic joint infection with *Actinomyces*, a gram-positive, anaerobic bacteria is rare. Late haematogenous joint infections with *Actinomyces israelii* (*A. israelii*) have been described in literature but not reported in association to an unchecked forgotten intrauterine contraceptive device (IUCD) which prompted us to enlighten the diagnosticians as well as treating surgeons with this case in which the infected IUCD was the source of prosthetic infection.

## 2. Case report

A 36-year-old illiterate female presented to outpatient department with left hip pain since 3 months. The past history revealed that she was operated for painful hip at a private centre 6 years back. Her available written records revealed that she had total hip replacement (THR) for avascular necrosis of the left hip. On physical examination, the patient was afebrile, and her systemic examination was unremarkable. There was localized pain in the left hip, with

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raised local temperature and reduced range of motion compared to right hip. Laboratory parameters showed total leucocyte count of 12,500/ml with neutrophilia, the erythrocyte sedimentation rate was 110 mm/h and c-reactive protein of 70 mg/l. Skiagrams of the left hip showed osteolysis around femoral and acetabular components. Fluid aspirated from the left hip joint was turbid and its microscopic analysis revealed a leucocyte count of 35,000/ml with 90% being neutrophils. On Giemsa stain, numerous basophillic colonies of filamentous organism were seen (Fig. 1) which on further Gram stain were seen as beaded, branched, filamentous gram positive rods (Fig. 2). These colonies were negative for acid fast stain. Based on the morphological features, actinomycotic infection was suspected. Anaerobic cultures grew numerous opaque white colonies of gram-positive, irregular bacilli. The organism was identified as *A. israelii*. Antibiotic susceptibility testing was done and revealed susceptibility to penicillin, cefotaxime, cefoxitin, metronidazole and clindamycin.

The case was again revisited. An attempt was made to look for the primary site of infection. The important risk factors for joint infection like diabetes, steroid intake, trauma, intravenous drug abuse and dental extraction were ruled out. The patient on further evaluation revealed history of irregular vaginal foul smelling discharge since last 2 years. She gave history of IUCD use which was kept 8 years back. The skiagrams were reviewed and it showed a metallic IUCD in the uterus which was missed earlier (Fig. 3). The patient was referred to obstetrics and gynaecology department for further examination. Her per vaginal examination revealed pockets of pus around the IUCD (copper T). The IUCD was removed, area was gently curetted, lavaged and the material was sent for histopathology and culture. Microscopically, sections of the curetting showed thin filamentous aggregates of actinomycetes surrounded by few scattered neutrophils (Fig. 4) and the culture showed colonies of *A. israelii*. The patient was put on antibiotic (Penicillin G – 24 million U/d intravenous by continuous infusion). After 48 h, she showed some signs of improvement i.e. relief in local pain and a feeling of general well being. The patient was advised surgery for the hip in form

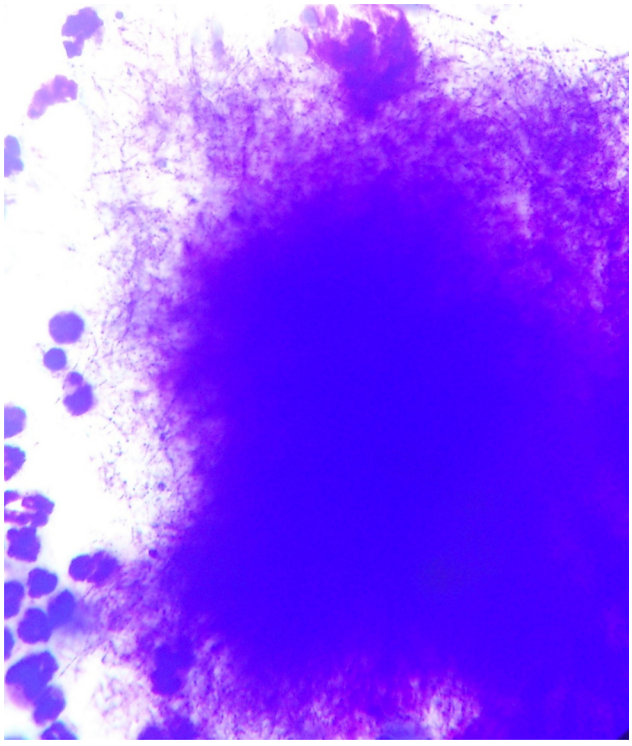

**Fig. 1 – *Actinomyces israelii*, filamentous aggregate (Giemsa stain, 40×).**

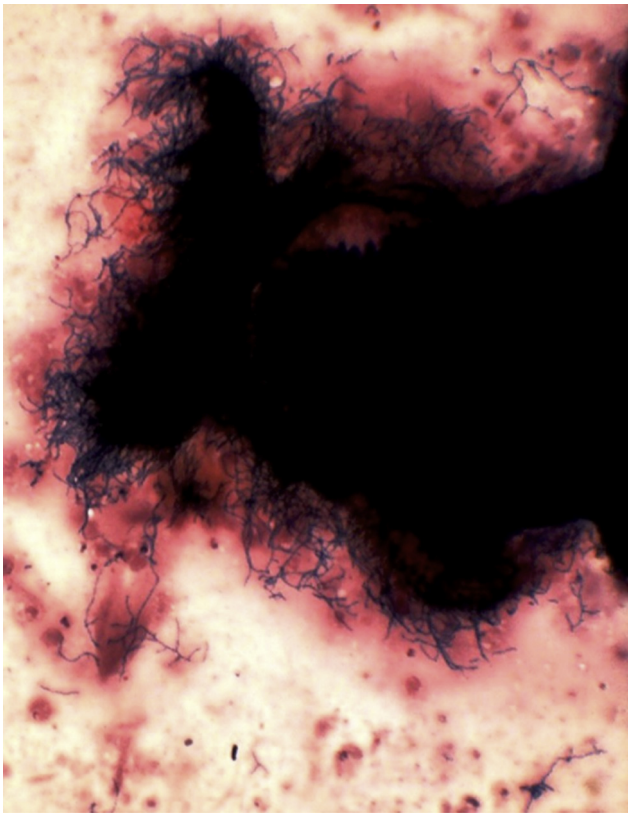

**Fig. 2 – Branched, beaded, filamentous gram positive colony of *Actinomyces israelii* (Gram stain, 40×).**


**Fig. 3 – Skiagram revealing an intrauterine contraceptive device along with osteolysis around the prosthesis.**