Pelvic actinomycosis: still a cause for concern

Aisling Susan Baird

Abstract
Three cases of pelvic actinomycosis, which presented over a short period of time, are described. In all three cases the diagnosis was only considered following laparotomy, although there were characteristic diagnostic clues at presentation. In two cases imaging of the pelvis by ultrasound and computed tomography was unhelpful in distinguishing the condition from pelvic neoplasia.

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Introduction
Although thought to be uncommon, three cases of actinomycosis presenting over a 3-month period to a gynaecological unit in a teaching hospital of 800 beds are reported. This report serves as a useful reminder for the family planning doctor making a referral and the gynaecologist contemplating laparotomy.

Case reports
Case 1
Case 1 (Table 1) was a 52-year-old multiparous housewife with frequent, heavy periods, weight loss of 8 kg in 2 weeks, back and lower abdominal pain for 8 days and vomiting for 4 days. A Saf-T-Coil® intrauterine contraceptive device (IUD) had been in situ for 21 years. Cervical cytology smears had all been normal, the most recent 3 years previously. Examination showed a tender mass arising out of the pelvis on the right. There was a pyrexia of 38.3ºC, total white cell count in the peripheral blood was 17.5 cells x 10⁹/l (with a left shift) and the C-reactive protein was markedly raised at 195.7 mg/l (normal level, <10 mg/l).

A computed tomography (CT) scan demonstrated a bulky, probably fibroid, uterus containing an IUD displaced by an extensive, complex, cystic lesion in the pouch of Douglas on the left side of the pelvis and on the right side lying behind the uterus a further lesion with both cystic and solid components (Figure 1). A computed tomography (CT) scan demonstrated a bulky, probably fibroid, uterus containing an IUD displaced by an extensive, complex, cystic lesion in the pouch of Douglas on the left side of the pelvis and on the right side lying behind the uterus a further lesion with both cystic and solid components (Figure 1).

Five days after admission, a laparotomy was performed and a large (110 x 90 x 60 mm) left-sided ovarian mass and (60 x 60 x 30 mm) right-sided ovarian mass were found. A total abdominal hysterectomy, bilateral salpingo-oophorectomy and omentectomy were performed. The left-sided ovarian cyst proved to be a benign cystadenoma. Microscopy further demonstrated a severe and active chronic inflammatory process affecting the uterus and the right ovary and tube with endosalpingitis of the right tube and a tubo-ovarian abscess. Gram’s and periodic acid Schiff staining showed slender actinomycotic organisms on the endometrial surface, in the right Fallopian tube and in the abscess cavities (Figure 2). There was no evidence of malignancy. The patient made a good postoperative recovery, receiving less than 1 week of antibiotic cover.

Royal Hallamshire Hospital, Sheffield, UK
Aisling Susan Baird, MRCoG, MFFP, Specialist Registrar in Obstetrics and Gynaecology

Correspondence to: Dr Aisling Susan Baird, The Jessop Wing, Royal Hallamshire Hospital, Tree Root Walk, Sheffield S10 2SF, UK. E-mail: aislingbaird@email.com

CASE REPORT

Figure 1 Computed tomography scan of the pelvis showing tubo-ovarian masses (one complex solid and cystic lesion is arrowed)

Figure 2 Actinomycosis of the ovary (haematoxylin and eosin, x100)
extensive, multilocular pelvic abscess, from which the pus grew *Actinomyces israelii*. Postoperative progress under prolonged antibiotic cover (cephalexin, metronidazole and doxycycline) was uneventful. Penicillin was prescribed orally for 3 months.

**Case 3**

Case 3 was a 35-year-old parous woman attending a gynaecological outpatient clinic with a 6-month history of intermenstrual and postcoital bleeding. Two years previously, a cervical smear had been reported as moderately dyskaryotic. Histology following loop excision of the cervix showed CIN 3 with clear excision margins and no stromal invasion.

At the outpatient clinic, an indwelling IUD was replaced with a Multiload® Cu375 IUD. The uterus was noted to be tender but abdominal and vaginal examinations were otherwise unremarkable. Endocervical swabs were negative.

By 1 month, the patient had developed a constant, right-sided, lower abdominal pain disturbing sleep and daily activities. This persisted for another 4 weeks when a pelvic ultrasound scan showed a complex pelvic mass with a 5 x 7 x 6 cm loculated cystic area and a small, adjacent, solid component with an **in situ** IUD. CA125, blood count, electrolytes and liver function tests were all within normal limits. At laparotomy a chronic inflammatory mass involving the uterus, both ovaries and sigmoid colon was found together with an adherent omentum. The IUD was removed and biopsies were taken from the omentum and the inflammatory mass. These showed fibrotic and inflamed adipose tissue only. *Actinomyces israelii* was isolated from the IUD. The postoperative period was uncomplicated and a 6-week course of oral Co-amoxiclav® 375 mg tds was prescribed.

**Discussion**

Clinical actinomycosis occurs by invasion and abscess formation by actinomycotic organisms in three anatomical regions: cervicofacial, thoracic and abdominal. A fastidious, slow-growing, anaerobic, Gram-positive, filamentous bacterium, the most frequently isolated species, *A. israelii*, is a normal commensal of the mouth, gastrointestinal and female genital tracts, and is normally of low pathogenicity. Other species implicated in clinical disease include: *A. bovis, A. ericksoni, A. naeslundii, A. viscosus* and *A. odontolyticus*. Invasive pelvic disease in women is usually associated with the use of an IUD, yet the simple carriage of actinomyces in the genital tract is not predictive of the development of clinical disease even if associated with an IUD.1–2 Persson and Holmberg3 found the organism in 3–4% of women on a single vaginal culture associated with an IUD.1,2 Persson and Holmberg3 found *Actinomyces israelii* presented within 3 months to an English teaching hospital of 800 beds. An anaerobic bacterium of low virulence, actinomyces does not cross intact mucous membranes, and invasive disease can take several years to develop. Two of our three patients had undergone recent excision of cervical tissue: it is interesting to speculate an association. Although ALOs had been identified on cervical cytology in Case 2, neither IUD removal nor antibiotic therapy are recommended in this situation unless the woman is symptomatic.6,7 Compared with Fiorino’s series the cases described here show many similarities. Yet despite characteristic presenting features, actinomycosis was not considered preoperatively and all three women underwent laparotomy before the diagnosis was revealed.

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**Funding.** None identified.

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### Table 1 Clinical findings in three cases of pelvic actinomycosis

<table>
<thead>
<tr>
<th>Case</th>
<th>IUD type</th>
<th>Years in situ</th>
<th>Clinical finding</th>
<th>Abdominal pain</th>
<th>Back pain</th>
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<th>Fever and weight loss</th>
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</table>

Hb, haemoglobin; IUD, intrauterine device.

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**References**


7 Faculty of Family Planning and Reproductive Health Care Clinical Effectiveness Unit. FPRHRC Guidance (January 2004). The copper intrauterine device as long-term contraception. *J Fam Plann Reprod Health Care* 2004; **30**: 29–42.

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