

Genital tuberculosis in postmenopausal women with variable clinical presentations: A report of 3 cases

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ABSTRACT

Genital tuberculosis is usually diagnosed in young women being assessed for infertility. After menopause it usually presents with symptoms resembling endometrial malignancy, such as postmenopausal bleeding, persistent vaginal discharge and pyometra. The diagnosis is made by detection of acid-fast bacilli on microscopy or bacteriological culture and/or presence of epithelioid granuloma on biopsy. Anti-tubercular therapy involves the use of rifampicin, isoniazid, pyrazinamide and ethambutol. Surgery is indicated if a pelvic mass and recurrence of pain or bleeding persist after 9 months of treatment. Three cases of genital tuberculosis in postmenopausal women with different clinical presentations are reported. The first woman presented with ascites and weight loss. The second had postmenopausal bleeding with a pipelle biopsy suggestive of endometrial intraepithelial neoplasia. The third presented with weight loss and a palpable abdominal mass. Pelvic malignancy was initially suspected but a diagnosis of tuberculosis was made following pre-operative endometrial biopsy, bacteriological culture and intra-operative frozen section. All three women responded to anti-tubercular therapy.

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1. Introduction

Tuberculosis remains a global health problem. While tuberculosis primarily affects the lungs, the incidence of disseminated and extrapulmonary disease is increasing [1]. Although most of those affected are of reproductive age, the disease has been reported in postmenopausal women as well [2]. Genital tuberculosis after menopause is rare, probably because of the decreased vascularity of the tissues [3]. In most affected women, genital tuberculosis remains undiagnosed because it is either asymptomatic or associated with some non-specific symptoms, such as lower abdominal discomfort and abnormal vaginal discharge.

2. Case 1

A 59-year-old postmenopausal woman presented to the outpatient department with a history of ascites and weight loss. There was no postmenopausal bleeding. Menopause had occurred at the age of 45 years.

Abbreviations: ATT, anti-tubercular therapy; CT, computerised tomography; MRI, magnetic resonance imaging; PCR, polymerase chain reaction.

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Her general medical, gynaecological and family histories were unremarkable, as were physical (including pelvic) examinations.

Her chest X-ray was normal. Ultrasonography showed that the uterus was of normal size but with an endometrial collection. Arising from the right anterior wall there was a polypoidal solid lesion showing mild vascularity and measuring 10 × 6 mm, which was suspected to be a neoplasm (Fig. 1). There were also free fluid and multiple tiny peritoneal nodules.

A computerised tomography (CT) scan (Fig. 2) showed that the pelvic structures were of normal size but also a small collection of fluid was seen in the endometrial cavity. Also noted were gross ascites and a few peritoneal cystic and tiny solid nodules. No pelvic mass was detected.

Purulent fluid from the endometrial cavity was collected by cervical dilatation and curettage and sent for acid-fast bacilli culture and staining. No acid-fast bacilli were detected. Pipelle endometrial biopsy revealed tubercular endometritis. Endometrial tissue showed granulomatous inflammation with necrosis. Epithelioid cells formed granulomas with infiltration of mononuclear inflammatory cells around them. Langerhans' giant cells were also recognized. The result of the polymerase chain reaction (PCR) for *Mycobacterium tuberculosis* was positive in the endometrial tissue samples.

Anti-tubercular therapy (ATT) was initiated. A 6-month course was given, comprising 2 months of quadruple therapy consisting of isoniazid (5 mg/kg), rifampicin (10 mg/kg), ethambutol (20 mg/kg) and pyrazinamide (25 mg/kg), followed by four months of maintenance treatment consisting of a daily double-agent therapy of isoniazid

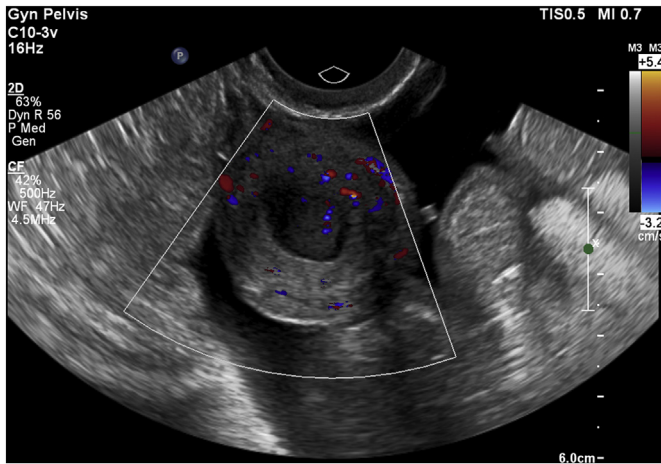


Fig. 1. Case 1. Ultrasound scan showing a polypoidal solid lesion with mild vascularity.

(5 mg/kg) and rifampicin (10 mg/kg). The patient responded well. Ultrasonography at 6 months was normal.

3. Case 2

A 58-year-old hypertensive woman with type 2 diabetes presented with one episode of postmenopausal bleeding and pipelle endometrial biopsy suggestive of endometrial intraepithelial neoplasia (defined as proliferation of endometrial glands with irregular outlines, a high gland:stroma ratio, architectural complexity, and back-to-back crowding with features of atypia). Her last menstrual period was at the age of 50. Physical (including pelvic) examination was normal.

Her chest x-ray was unremarkable. Ultrasonography showed a normal-size uterus with an endometrial thickness of 2.3 mm. A CT scan showed the pelvic structures were of normal size but revealed multiple enlarged lymph nodes (Fig. 3). Fine-needle aspiration from an axillary node was undertaken but cytology was inconclusive. She underwent total abdominal hysterectomy plus bilateral salpingo-oophorectomy, and a biopsy sample was taken from a para-aortic lymph node. An intra-operative frozen section showed inflammatory pathology. Histopathology later revealed necrotizing chronic granulomatous cervicitis, endometritis and salpingitis of mycobacterial aetiology involving both

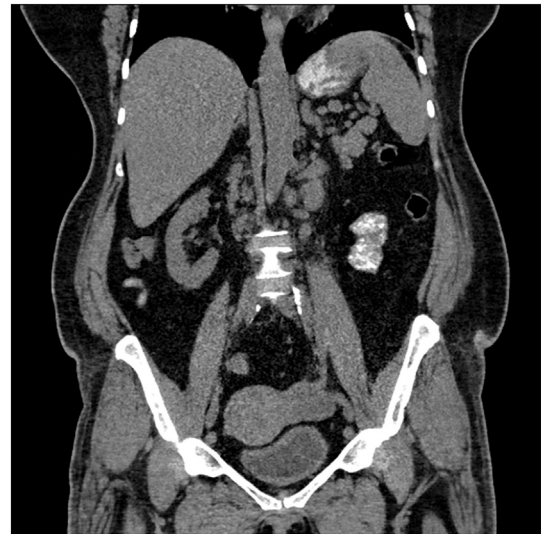


Fig. 3. Case 2. CT scan showing normal-sized pelvic structures but also multiple enlarged homogenous celiac, perigastric, peri-pancreatic and para-aortic lymph nodes. The largest lymph node was in the lower para-aortic region and measured 19 × 19 mm.

fallopian tubes. Histopathology of lymph nodes showed caseating chronic granulomatous lymphadenitis of mycobacterial aetiology. The final histopathology report showed no evidence of endometrial malignancy.

Anti-tubercular therapy was commenced. It consisted of 2 months of quadruple therapy with isoniazid (5 mg/kg), rifampicin (10 mg/kg), ethambutol (20 mg/kg) and pyrazinamide (25 mg/kg), followed by 4 months of maintenance treatment consisting of a daily double-agent therapy of isoniazid (5 mg/kg) and rifampicin (10 mg/kg). She responded well to treatment.

4. Case 3

A 56-year-old postmenopausal woman presented with a 6-month history of weight loss. Menopause had occurred at the age of 52 years. Her abdominal examination revealed an old healed midline scar (from a caesarean section) with a 14-week size pelvic mass. Speculum examination was normal. On bimanual examination, a cystic mass



Fig. 2. (a) and (b): Case 1. CT scan showing gross ascites (a) and peritoneal nodules (b).

approximately 10 × 8 cm was felt in the pouch of Douglas. The uterus was not felt separately from the mass. The CA-125 value was 45 units/ml. Her chest X-ray was normal.

Transvaginal ultrasonography revealed a normal-sized uterus with an endometrial thickness of 2.3 mm. There was a large complex solid cystic mass measuring 12.0 × 8.5 × 12.0 cm in the midline and to the right. There were scattered areas of vascularity within the solid components. An inferiorly located complex cystic component showed thick septations. The cyst wall had an arterial signal with low-resistance flow. A small area of calcification was also seen within the solid components (Fig. 4).

Magnetic resonance imaging (MRI) of the pelvis with contrast showed a solid-cystic mass in the midline of the pelvis extending behind the uterus into the rectouterine space. The mass measured 11 × 10 × 9.8 cm. The uterine body was atrophic and displaced anteriorly against the urinary bladder (Fig. 5).

She underwent total abdominal hysterectomy plus bilateral salpingo-oophorectomy. There was a left tubo-ovarian mass measuring 11 × 10 cm with solid and cystic areas. Wedge biopsy from this mass was sent for frozen section and reported as tuberculosis. ATT was started with 2-month quadruple therapy consisting of isoniazid (5 mg/kg), rifampicin (10 mg/kg), ethambutol (20 mg/kg) and pyrazinamide (25 mg/kg), followed by 4 months of maintenance treatment consisting of a daily double-agent therapy with isoniazid (5 mg/kg) and rifampicin (10 mg/kg). She responded well and follow-up ultrasonography after 6 months was normal.

5. Discussion

Genital tuberculosis is usually caused by reactivation of organisms from the systemic distribution of *Mycobacterium tuberculosis* during the primary infection. While primary infection often begins in the lungs, it is usually undetectable by the time the diagnosis of genital tuberculosis is made. The disease is responsible for 5% of all female pelvic infections. Extrapulmonary tuberculosis constitutes 15–20% of all cases of tuberculosis [4], and 5–13% of patients with pulmonary tuberculosis develop genital infection [5]. In genital tuberculosis, the endosalpinx is the primary site of involvement in 90–100% of cases, from where it can spread to the peritoneum, endometrium, ovaries, cervix and vagina. The endometrium is involved in 50–60% of cases, the ovaries in 20–30% of cases and the cervix in 5–15% of cases. Tuberculosis of the vagina and vulva is rare (1–2%) [6].

Genital tuberculosis tends to be an indolent infection, and the disease may not manifest for years after initial seeding. The most common presentations reported in the general population are infertility (44%), pelvic pain (25%), vaginal bleeding (18%), amenorrhoea (5%), vaginal

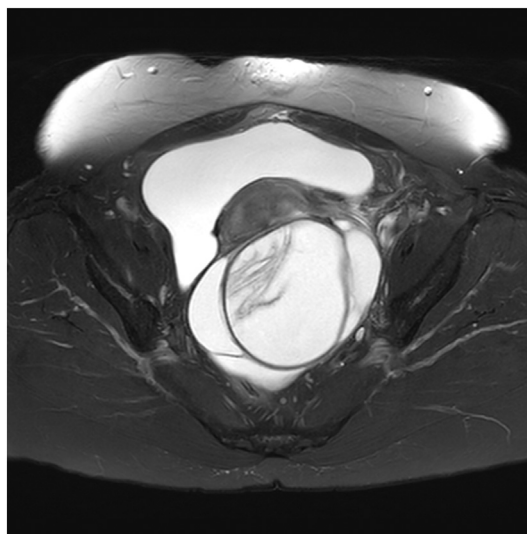


Fig. 5. Case 3. MRI scan showing a complex mass in the midline pelvis, extending into the recto-uterine space.

discharge (4%) and postmenopausal bleeding (2%). Less common presentations include abdominal mass, ascites, tubo-ovarian abscess, and abdominal distention, persistent vaginal discharge and pyometra [7]. Postmenopausal women usually present with bleeding, pyometra and persistent vaginal discharge.

Tuberculosis has existed for millennia and remains a major global health problem. It causes ill-health for approximately 10 million people each year and is one of the top 10 causes of death worldwide. For the past 5 years, it has been the leading cause of death from a single infectious agent, ranking above HIV/AIDS [8]. It should be considered as a differential diagnosis in countries with a high disease burden [8]. A definite diagnosis can be made by microscopy, culture and histology [9–11]. First-line treatment is medical [11]; however, surgery is required if the diagnosis is in doubt [12], when there is persistence of a pelvic mass and recurrence of pain or bleeding after 9 months. Surgery should be performed at least 6 weeks after initiation of ATT, because antimicrobial treatment facilitates the surgical procedure and reduces the risk of peri-operative complications [12].

Contributors

Ashima Arora collected and analysed the data and wrote the manuscript.

Shameema Anvar Sadath critically reviewed the manuscript.

Conflict of Interest

The authors declare that they have no conflict of interest regarding the publication of this case report.

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Patient Consent

Written informed consent was obtained from all three patients for the publication of this case report and accompanying images.

Provenance and Peer Review

This case report was peer reviewed.

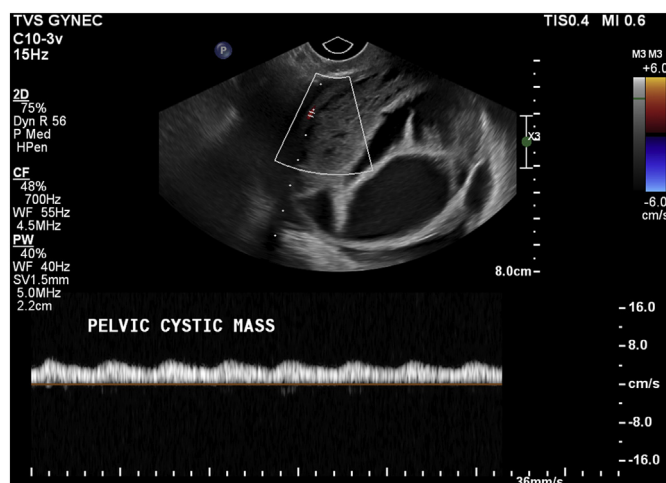


Fig. 4. Case 3. Ultrasound scan showing a large complex solid cystic mass.

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