Pelvic tuberculosis mimicking ovarian cancer

A 30-year-old woman, gravida 6, para 6, was admitted in our hospital because of an abdomino-pelvic mass, ascites and lower abdominal pain, anorexia, weight loss, lethargy and weakness.

Imaging Findings:

A thoracoabdominopelvic CT was performed and revealed the presence of bilateral heterogeneous adnexal masses, with two components: cystic and solid, the latter moderately enhancing after injection of contrast media; they were associated with an extensive ascites, with peritoneal thickening and prominent enhancement (Fig. 1). At the thoracic level, there was pulmonary condensation of the left inferior lobe surrounded by centrilobular nodules, associated with Necrotic mediastinal lymphadenopathies (Fig. 2). A pelvic MRI followed and showed an extensive compartmentalised ascites, marked peritoneal thickening and enhancement, two pelvic masses on both sides of the uterus of globally elongated shape, partly multicystic with thickened, contrast-enhancing walls and septations and solid elements, enhancing after contrast material administration (Fig. 3). The two ovaries were normal. Tuberculosis was suspected on the basis of the mediastinal and pulmonary lesions and the normal appearance of the ovaries. The diagnosis of pelvic tuberculosis was confirmed histologically.

Discussion:

Genital tract involvement is detected in 1.3% of female patients with tuberculosis, and the affected sites are: endometrium (72%), salpinx (34%), ovary (12.9%), and cervix (2.4%) [1]. It is usually caused by reactivation of organisms from systemic distribution of M. tuberculosis. Direct sexual transmission is possible. Dissemination from other intra-peritoneal foci is rare [2]. It can occur at any age, with a predilection for women from 20 to 30 years of age [3]. Classical symptoms include pelvic pain, infertility, deterioration of the general state or menstrual disturbances. It may also be detected as adnexal mass with ascites which can mimic ovarian malignancy [4]. Tuberculous Tubo-ovarian abscess (TOAs) may appear at ultrasound as complex adnexal masses with extensive ascites, mimicking ovarian neoplasm with peritoneal dissemination. Nonetheless, there can be various ultrasound...
findings according to the stage and location of this disease and they are also nonspecific [5].

When tuberculosis affects ovaries and salpinges, tubo-ovarian lesions are mostly small or even insignificant at CT, while the aspects of tuberculous peritonitis usually mimic those of peritoneal carcinomatosis. MRI is more useful in affirming tubo-ovarian lesions and may show nodularities on tubo-ovarian surfaces or thickened salpinges. But these aspects are also nonspecific and differentiation from malignant tumours with/or without peritoneal seeding is often difficult. There are some useful findings allowing to suggest tuberculous peritonitis such as smoother peritoneal thickening at CT and more regular minuscule peritoneal nodularities at MRI [6].

At MRI, the walls of tuberculous TOAs show hyposignal on T2-WI [5]. Dense attachment with the uterus or other adjacent organs is common; loculated fluid collections with internal septations are frequently found adjacent to the masses; in the pouch of Douglas, and in other parts of the peritoneal cavity [5].

Tuberculous salpingitis is generally caused by haematogenous or lymphatic dissemination, (when it progresses and includes the ovaries, it forms TOAs). Peritonitis is frequently associated. Cystic or solido-cystic adnexal masses, generally bilateral, are associated with ascites, omental or mesenteric infiltrations, and peritoneal thickening. These data simulate exactly those of peritoneal carcinomatosis from ovarian cancer. If calcifications are found in adnexal masses at CT they must suggest tuberculosis (even if they are not frequently observed, especially in active inflammation). Lymphadenopathies are frequent, and necrotic lymph nodes may be found [7, 8].

Diagnostic standards should include laparoscopically guided peritoneal biopsy [9].

Microbiological cultures of ascitic fluid are rarely positive [10]. The treatment of pelvic tuberculosis is generally medical and includes anti-bacillus medication [10]. The surgical treatment is indicated in case of fistulisation or compressive mass [11].

The prognosis is related to the risk of infertility [12].

**Differential Diagnosis List:** Pseudotumoral pelvic tuberculosis, Ovarian cancer with peritoneal carcinomatosis, Pelvic actinomycosis, Tubo-ovarian abscess, Xanthogranulomatous infection

**Final Diagnosis:** Pseudotumoral pelvic tuberculosis

**References:**


**Figure 1**

*a*  
Description: Abdominopelvic CT after injection (portal phase): bilateral adnexal masses (arrows), heterogeneous with two components: cystic and solid, moderately enhancing after injection; associated with an extensive ascites, peritoneal thickening and enhancement (star). **Origin:** Tizniti S, department of Radiology, CHU HassanII, FES, Morocco

*b*  
Description: Abdominopelvic CT after injection (portal phase): extensive ascites is detected, with peritoneal thickening and enhancement. **Origin:** Tizniti S, department of Radiology, CHU HassanII, FES, Morocco
**Figure 2**

a

**Description:** Chest CT after injection: a) lung window with MIP, shows pulmonary condensation of the left inferior lobe surrounded by centrilobular nodules. **Origin:** Tizniti S, department of Radiology, CHU HassanII, FES, Morocco

b

**Description:** Chest CT: b) mediastinal window shows necrotic mediastinal lymphadenopathies (arrowheads). **Origin:** Tizniti S, department of Radiology, CHU HassanII, FES, Morocco
**Figure 3**

**a**

Description: Pelvic MRI: a) Coronal T2 shows two heterogeneous pelvic masses on both sides of the uterus (curved arrow). The two ovaries are normal (thin arrows). Origin: Tizniti S, department of Radiology, CHU HassanII, FES, Morocco

**b**

Description: Pelvic MRI: b, c) Axial T2: extensive compartmentalised ascites (star), two pelvic masses on both sides of the uterus (curved arrows). Origin: Tizniti S, department of Radiology, CHU HassanII, FES, Morocco
Description: Pelvic MRI: b,c) Axial T2: extensive compartmentalised ascites (star), two pelvic masses on both sides of the uterus (curved arrows). The two ovaries were normal. Origin: Tizniti S, department of Radiology, CHU HassanII, FES, Morocco

d
Description: Pelvic MRI: d) axial T1 C+: shows smooth peritoneal thickening and marked enhancement (vertical arrow), pelvic masses (curved arrow) with cystic and solid parts, the latter contrast-enhancing (horizontal arrow). Origin: Tizniti S, department of Radiology, CHU HassanII, FES, Morocco