

Abdominopelvic Tuberculosis: A Possibility with Varied Gynaecological Presentations

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Abstract

Abdominopelvic tuberculosis, a case series with variable gynecological symptoms is presented to highlight its frequency among Pakistani women. The study was carried out at MCH Centre, Pakistan Institute of Medical Sciences (PIMS), Islamabad Pakistan from 1st June 2014 to 30th June 2016. We describe five cases of pelvic tuberculosis, each presented with different complaints. The necessity of suspecting the diagnosis of pelvic tuberculosis in women with various gynecological diagnoses e.g., subfertility, adnexal masses, menstrual irregularities, ascites, persistent abdominal pain etc. is underlined. The first woman presented with bilateral complex ovarian masses and gross ascites with suspected ovarian carcinoma. A second patient was diagnosed during the workup of subfertility. The Third patient presented with irregular menstrual cycles since menarche while the fourth woman was being investigated with suspicion of malignant ovarian mass. Fifth female with tuberculosis presented with secondary amenorrhea and left adnexal mass. It is highlighted that diagnosis of pelvic tuberculosis should be kept in mind with various gynaecological presentations especially in Pakistan where it is endemic. Pakistan currently ranks fifth amongst countries with highest burden of Tuberculosis alongside the fourth highest burden of Drug Resistant Tuberculosis globally. In an estimated population of around 180 million with annual incidence of Tuberculosis being 231/100,000, Pakistan produces about 420,000 new cases annually.

Key Words: Abdominopelvic tuberculosis, Subfertility, Ascities.

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Introduction

Pelvic tuberculosis (TB) in females is common, particularly in communities where pulmonary or other forms of extra genital TB are common.¹ TB can affect any organ in the body, can exist without any clinical manifestation, and can recur. Female pelvic TB is typically understood as a disease of young women, with 80% to 90% of cases diagnosed in women aged between 20 and 40 years, often during workup for subfertility.²

Pelvic TB is almost always secondary to TB elsewhere in the body usually pulmonary and sometimes renal, gastrointestinal, bone, or joints.

Occasionally it is part of a generalized miliary disease process. TB infection actively affects genital organs, causes tissue destruction, tubal damage or blockade leading to increased risk of subfertility and ectopic pregnancy.^{2,3}

Abdominopelvic TB is difficult to diagnose as it presents with variable symptoms. In such cases, laparotomy can be useful tool to diagnose. The exploratory laparotomy is performed with the objective of obtaining information that is not available via clinical diagnostic methods. So, it is also called diagnostic laparotomy. It is usually performed in

patients with acute or unexplained abdominal pain, in patients who have sustained abdominal trauma. On the other hand, a procedure in which a particular region is surgically examined to assess the extent of malignance/ stage of a cancer, so called staging laparotomy.

We describe five cases of pelvic tuberculosis, each presented with different complaints. First patient presented with bilateral complex ovarian masses and gross ascites (ovarian carcinoma was suspected). Second patient was diagnosed during the workup of infertility. Third patient presented with irregular cycles since menarche while the fourth woman was being investigated with suspicion of malignant ovarian mass. Fifth female with tuberculosis presented with secondary amenorrhea and left adnexal mass. It is highlighted that diagnosis of abdominopelvic tuberculosis should be kept in mind with various gynaecological presentations.

Case Report

CASE 1:

A 19yrs old patient, P1+0, was referred to our department from medicine. She presented with abdominal pain and distention from eight months. She also had history of decreased appetite, weight loss and fever from last 6 months. Her mother had tuberculosis before her birth. There was no family history of other infectious, inflammatory or genetic diseases or any cancer. The physical examination revealed protuberant abdomen with positive fluid thrill. Regarding investigations; blood complete picture, ascitic fluid biochemical analysis and culture, sputum for acid fast bacillus, and Montoux test were all normal. Her Erythrocyte sedimentation rate (ESR) was raised (65mm/hr). The serology for hepatitis B and C was negative. An increased level of CA 125 of 514.7 U/mL was noted (normal values <35U/mL). Rest of the tumor markers were normal. The ultrasound showed gross abdominopelvic ascites measuring 8.5 cm in paracolic gutters and bilateral complex adnexal cysts (Right sided measuring 4.3 x 5.4cm and left sided measuring 3.7 x 4cm). The computerized tomography scan pelvis, confirmed the presence of gross ascites as well as bilateral ovarian cystic lesions (right 4.3 x 5cm and left 3.5 x 4cm) and mesenteric lymphadenopathy.

Staging laparotomy was done because initially ovarian carcinoma was suspected. Laparotomy revealed disseminated miliary lesions, uterus covered by pseudomembrane and bilateral fallopian tubes swollen and firm in consistency. Bilateral pseudocysts revealed straw colored fluid. At the analysis of the frozen section of omentum and pseudomembrane covering uterus, the diagnosis of abdominopelvic tuberculosis was made. Biopsies were taken from omentum, pseudocysts wall and pseudomembrane. Fluid was sent for cytology from pseudocysts. Ascitic fluid was also sent for cytology. Specific quadruplet treatment was started (Isoniazid, Rifampicin, Pyrazinamide and Ethambutol). Later on the histopathology from biopsies showed caseating granulomatous inflammation and cytology revealed acute inflammation but no malignant cells.

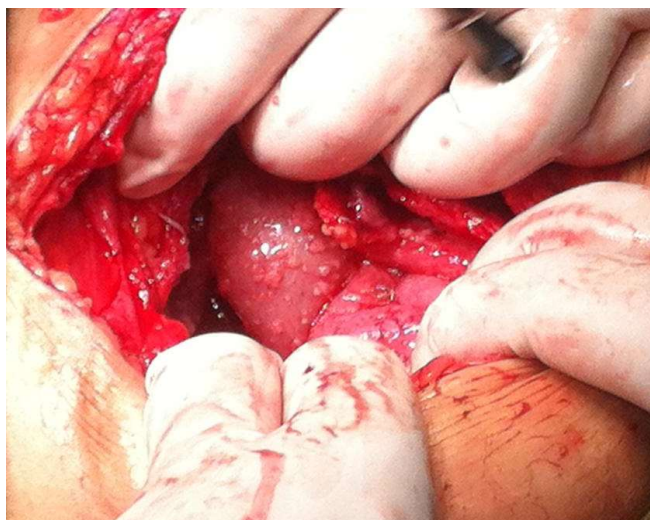


Figure 1. Disseminated miliary lesions and uterus covered with pseudomembrane can be clearly seen in picture.

CASE 2:

A 23 years old woman, married for 3 years, presented with primary subfertility May 7, 2014. Lower abdominal pain was also noted for three years and on and off per vaginal bleeding for 4 months. ESR was 40mm/hr (normal 0-20 mm/hr). Ultrasound showed right enlarged ovary with solid looking mass (4.3 x 4.8 cm) and mild to moderate endometriosis. Tumor markers were normal except for raised serum CA 125 of 502.2 U/mL. Diagnostic laparoscopy and dye test was performed due to primary subfertility and suspicion of endometriosis, which revealed multiple white seedlings (miliary tuberculosis), dense

adhesions involving pelvis and gut, left round ligament was visualized after separation of adhesions, both fallopian tubes and ovaries were not visualized separately (frozen pelvis). Bilateral hard tubo-ovarian masses were seen approximately 3x4 cm. Two biopsies were taken from peritoneum and pseudocysts wall. Multiple pseudo cysts seen, which were opened and straw-colored fluid aspirated for cytology. Bilateral fallopian tubes were blocked on dye test. Endometrial curettings were taken at the end, for histopathology and acid-fast bacillus. Histopathology of biopsied lesions and endometrial curettings revealed caseating granulomatous inflammation, with suspicion of pelvic tuberculosis. Mantoux test showed borderline results (07) and ICT TB test was negative (done after the procedure). The patient was started on Anti Tuberculosis Treatment.

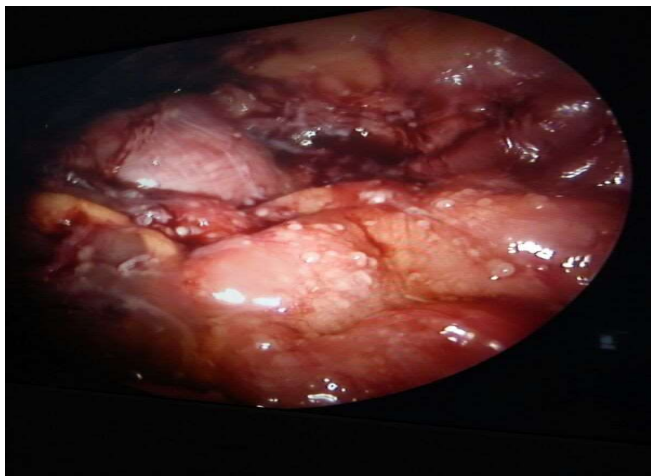


Figure 2. Picture shows multiple white seedlings, dense adhesions, tuboovarian masses, multiple pseudocysts.

CASE 3:

11 years old girl presented to us on February 13, 2014 complaining of irregular cycles since menarche and abdominal pain. Rest of the history was unremarkable. Abdominal examination showed right sided adnexal mass, 8 x 6 cm cystic and arising from pelvic. Pelvic ultrasonography revealed a well-defined cystic lesion measuring 10 x 6.4 x 6.0 cm in right adnexa. Color Doppler showed high resistance flow which suggest benign nature. Cystic lesion measuring 3.5 x 3.5 cm in left adnexa was also found. Rest of the investigations and all tumor markers were normal. Exploratory laparotomy was performed as nature of the disease was unknown and patient was in severe pain. Procedure can be

seen in Figure 3, which revealed bilateral pseudocysts (right sided 5 x 7 cm and left sided 4 x 5cm) and straw-colored fluid from cysts (aspirated for cytology) Biopsies were taken from peritoneum and pseudocysts wall. Straw colored fluid was aspirated for cytology. Pelvic tuberculosis was suspected. Histopathology of biopsied lesions revealed caseating granulomatous inflammation, which confirmed the diagnosis of pelvic tuberculosis and Patient was treated as per findings.



Figure 3. Bilateral pseudocysts are shown in the picture.

CASE 4:

A 30yrs old woman, P7+0, presented to our department on 4th January 2015, with gross ascites, abdominal distension and abdominal pain from the last 4 months and fever for 3 weeks. Contact history for tuberculosis was positive. Physical examination revealed protuberant abdomen with gross ascites. Spleen was enlarged 4.5cm and gallbladder was distended. Ultrasound showed gross ascites and a complex mass in left adnexa inseparable from ovary. The laboratory workup was normal except raised ESR of 72mm/hr and raised serum alkaline phosphatase ie, 335 U/L. The serology for hepatitis B and C was normal. An increased level of CA 125 of 305 U/ml was noted. Rest of the serum tumor markers were normal. The ascitic fluid examination revealed exudative fluid and mononuclear cells increased to 86%. Computed tomography also confirmed the presence of complex left adnexal mass measuring 36.5 x 39 mm with gross ascites, most likely representing malignant ovarian mass. Para aortic and mesenteric lymph nodes were enlarged.

Exploratory laparotomy was done which showed peritoneal cavity full of straw colored fluid. Matted thickened gut loops, inflamed and thickened were seen. Peritoneal lining was granular. Multiple yellowish specks and tiny seedlings were present on gut surface. Both fallopian tubes had granular and beaded appearance. Peritoneal biopsy sent for frozen section showed chronic granulomatous inflammation.

CASE 5:

A young girl, 16yrs of age, unmarried, resident of Kashmir, student of 10th class, presented to us on 17th June 2015 with secondary amenorrhea for seven months not responding to medical therapy. She had history of fever and headache from three months. She had one episode of hematemesis and epistaxis two months ago. Mild abdominal pain, backache, weakness, decreased appetite, abdominal distension and per vaginal discharge were also present for one month. Her father had history of tuberculosis. Abdominal examination showed cystic mass in left adnexa and fullness in left iliac fossa.

All baseline investigations were normal except slightly raised AST of 47iu/l (normal value 35iu/l). ESR was raised 39mm/hr. All tumor markers were normal except serum CA 125 of 150u/ml while ICT TB was negative. Ultrasound showed left adnexal mass of 10x8x7cm, both solid and cystic components present, no free fluid seen. CT scan with contrast revealed left adnexal cystic mass 13.8x6.8cm with thick enhancing walls.

Diagnostic Laparotomy was done because nature of disease was unknown. Per operatively small intestine was matted together and surface was covered with small nodules suggestive of miliary tuberculosis. Adhesionolysis done. Left adenexal cyst was drained and caseating material found, suggestive of miliary tuberculosis. Cyst biopsy was taken. Biopsy showed chronic granulomatous inflammation, most likely due to tuberculosis. Peritoneal fluid cytology showed acute inflammation. Patient was started on Anti Tuberculosis Treatment.

Discussion

Tuberculosis is a chronic infectious disease, and the morbidity associated with it has major health implications. When tuberculosis affects the genital

organs of young females, it has the devastating effect of causing irreversible damage to their fallopian tubes, resulting in a possible tuberculous pyosalpinx and subfertility.¹

Abdomino-pelvic tuberculosis is caused by *Mycobacterium tuberculosis* in 90 to 95% cases while *Mycobacterium bovis* with reservoir in cattle is responsible for the rest. Most commonly it spreads from person to person by the inhalation of aerosolised droplet nuclei produced by coughing, sneezing and talking. Other sources by oral ingestion and sexual intercourse are rare. Routes of spread of genital tuberculosis are hematogenous, descending from lymphatics, Gastrointestinal tract, mesenteric nodes or peritoneum and ascending by sexual contact.⁴

Clinical features are subfertility, chronic lower abdominal or pelvic pain and alterations in menstrual pattern. Less common clinical features are weight loss, night sweats, fever, abnormal vaginal discharge and post coital bleed. Post menopausal women can present with leucorrhea, pyometra or post menopausal bleeding. Painless vaginal ulcers, painful ulceration of vulva and fistula formation between skin, bowel and vagina are uncommon. Findings on physical examination are normal in majority of cases (43%). Positive findings include Adnexal mass (23.6%), Adnexal tenderness (< 5%), Ascites and even Uterine Prolapse (1.4%).⁵

Diagnosis of pelvic tuberculosis require high index of suspicion. Pelvic tuberculosis should be considered in a woman with high risk factors including unexplained subfertility, amenorrhea not explained by other causes, pelvic infection that does not respond to ordinary treatment and post menopausal women with bleeding, where endometrial neoplasia has been excluded.

Investigations usually reveal non specific findings like lymphocytosis and raised ESR. Montoux test may be useful in populations where tuberculosis is a rare disease and Chest X ray is normal in more than 75% of the patients with active, culture-proven pelvic tuberculosis. Imaging studies show findings of adnexal mass, thickened omentum and ascites. Endometrial biopsy is a frequent first diagnostic step. It can be very helpful if granulomata are found or, less commonly, if smears or cultures are positive for *Mycobacterium tuberculosis*.⁶

Laparoscopy and less commonly laparotomy is the gold standard for diagnosis of pelvic tuberculosis. It not only allows for visualization of the fallopian tubes, ovaries and peritoneal cavity, but also gives the opportunity to biopsy suspected tuberculous lesions and to restore the anatomy where appropriate. Findings on laparoscopy include tubercles on the peritoneal surface, inflamed uterus, salpingitis, oophoritis or a tubo-ovarian mass. But with the increasing availability of sophisticated imaging modalities and other investigative techniques, the indications for and scope of exploratory laparotomy have shrunk over time. These advanced techniques include High Resolution CT (HRCT), Thin Section multidetector row CT (MDCT), Adenosine Deaminase (ADA) and interferon gamma level estimation by analysis of amniotic fluid, polymerase chain reaction PCR of tissue biopsy specimen and blood but unfortunately most of these techniques are not readily available in public and even in private hospitals of Pakistan, so a massive infrastructure improvement is also important.

Treatment for Pelvic tuberculosis is same as the pulmonary tuberculosis with same number of drugs and duration of treatment. Surgery may be required in persistent and recurrent disease despite adequate treatment, persistent or recurrent pelvic masses after

6 months of adequate therapy, non healing fistula, multidrug-resistant disease, coexisting genital tract neoplasia or other pathology.

Conclusion

In this case series, the patients with various gynaecological presentations e.g., subfertility, adenexal masses, menstrual irregularities, ascities, persistent abdominal pain etc. are presented and the differential diagnosis resulted in diagnosis of pelvic tuberculosis. Pelvic tuberculosis can be treated as the pulmonary tuberculosis with same number of drugs and duration of treatment.

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