

CASE REPORTS

Diagnostic Dilemma of Pelvic Tuberculosis: Case Reports and Review of Literature on Clinical Presentations and Diagnosis

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Summary

Tuberculosis of the genital tract was diagnosed in six patients in the department of obstetrics and gynaecology, unit IV, at Dhaka Medical College Hospital from April 2002 to March 2003. All the cases presented with ascities, abdominal discomfort, ovarian mass, abdominal or pelvic pain, weight loss and were misdiagnosed as ovarian carcinoma. None had relevant past history. Tuberculosis

was diagnosed on histological evidence in all six cases, three by endometrial biopsy and three from omental and peritoneal biopsy. As tuberculosis is common in tropical countries like ours it may be concluded that pelvic tuberculosis should be considered as a differential diagnosis of cases with pelvic mass and ascities.

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Introduction

Approximately one third of world population (some 1.9 billion) is infected with *Mycobacterium tuberculosis*¹. The global case fatality rate is 23 percent but exceeded 50 percent in some African countries with high HIV infection (Human Immuno Deficiency Virus) rates. Over 95 percent of new tuberculosis (TB) cases and deaths due to the disease occur in developing countries and highest incidences are in Asia and Sub Saharan Africa¹. Although TB is uncommon in developed countries, its prevalence, especially that of extra pulmonary tuberculosis is increasing world wide^{2,3}. Demographic factors such as urbanization, increased travel and migration from endemic areas are contributing to the spread of tuberculosis world wide⁴. Increasing prevalence of HIV infection with TB being one of the opportunistic infection is a major factor in the tuberculosis epidemic in many regions particularly in Africa and Asia.

Globally some 900 million women of reproductive age are infected with *Mycobacterium tuberculosis* and at least 2.5 million develop active disease each year⁵. Tuberculosis is a leading cause of death among women

of reproductive age and accounts for 9% of female deaths world wide⁵. Genital tuberculosis is nearly always secondary to a focus elsewhere in the body, usually in the lungs. Five to 13% of patients with pulmonary TB develop genital infection^{6,7}. Genital tuberculosis appears to be an uncommon disease but its incidence is likely to increase as the tuberculosis epidemic progresses and therefore continues to be a problem for women⁸. The actual frequency of tuberculosis of the female genital tract cannot be determined accurately, as a large number of patients remain undiagnosed. At the same time it is difficult to diagnose because genital tuberculosis is often a disease with absent or few symptoms, and the symptoms are often nonspecific⁹. Moreover, presentations may be atypical mimicking the conditions like ovarian and endometrial malignancy, pelvic abscess and even carcinoma of cervix¹⁰. Over one year period from April 2002 to March 2003 six new cases of genital tuberculosis were diagnosed in the Maternity Unit-IV, Department of Obstetrics & Gynaecology, Dhaka Medical College Hospital. As illustrated in the cases below, the presentation of these patients were not characteristics and these created a diagnostic dilemma. Consequently, an array of investigations were carried out and often surgeries were performed before the diagnosis of TB was arrived at. None had a family or positive past history, and diagnosis were made on histological evidences. The details are summarized in tables.

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Case-1

A 24 years old lady of para-2 from a lower middle class family presented with lower abdominal pain and

gradual abdominal distention for one month along with anorexia, weight loss, low grade fever and sweating for one and a half months. Her menstrual cycle was regular except for the last menstruation which was heavy in flow and persisted for about 10 days. Pelvic examination findings were unremarkable.

Her erythrocyte sedimentation rate (E.S.R) was 65 mm during first hour. Chest radiograph was normal. Mantoux test was negative. CA 125 was 60 ku/L. Ultrasonography of lower abdomen revealed normal findings except presence of moderate ascites and a small right ovarian cyst (4.5X2.7 cm). Peritoneal fluid tapping revealed the ascites to be exudative. Diagnostic endometrial curettage was performed in the first day of menstruation which revealed presence of granulomas with epithelioid cell. The tissue was positive for Ziehl-Neelsen staining but culture for Mycobacterium tuberculosis of the peritoneal fluid was negative. Antitubercular drugs were started and the clinical responses were good.

Case-2

A 33 years old lady of para-3 from a middle class family presented with dull aching abdominal pain for eight months, weight loss, anorexia and intermittent pyrexia together with menorrhagia for six months. Pelvic examination findings were unremarkable.

Her ESR was 80 mm during first hour. Chest radiograph revealed right sided mild pleural thickening. Mantoux test was positive. CA 125 was 317 Ku/L. Ultrasound examination of the abdomen and pelvis revealed irregular mass around the left ovary (supposedly inflammatory). Right ovary was normal with moderate ascites. Ascitic fluid was exudative in nature and cytological examination did not reveal any malignant cells. Diagnostic endometrial curettage was performed and revealed presence of granuloma with epithelioid cells.

Both Ziehl-Neelsen staining and culture were negative for Mycobacterium tuberculosis. The patient responded well with antituberculous therapy.

Case-3

A 35 years old lady of para-3 from a poor family presented with intermittent lower abdominal pain for one year and feeling of a non tender mass in right

lower abdomen, weight loss and anorexia for one and a half months. There was no history of menstrual disturbance. Abdominal examination revealed a small mass (5/7 cm) in right iliac fossa, non-tender with restricted mobility, firm in consistency and the margins were not clearly defined. A firm right sided adnexal mass was found on vaginal examination. Apart from a raised ESR of 70 mm in first hour, all other laboratory tests and skiagram of chest were normal. Ultrasound scan of the pelvis showed minimal ascites and right adnexal complex mass. The clinical suspicion of ovarian carcinoma guided laparotomy.

The operative findings were dense adhesions with the formation of an omental cake, greenish-brown ascitic fluid and multiple miliary seedlings studded over the omentum, peritoneum, liver and undersurface of diaphragm. The pelvic organs were matted and covered in dense adhesions. The fallopian tubes were found to be dilated and inflamed. Both ovaries were otherwise normal. Histological examination of omental and peritoneal tissue showed multiple granulomas with numerous Langhan's giant-cells; both Ziehl-Neelsen staining and culture were negative for Mycobacterium tuberculosis.

The patient was with antituberculous therapy with good clinical response when reviewed two months later.

Case-4

A 19 years old poor woman, married for two years with no history of child birth presented with pain and swelling in lower abdomen for one month, anorexia, marked weight loss, intermittent rise of temperature and lethargy for the same duration. She was amenorrhic for previous seven months. Previously, her menstrual cycle was regular. She was grossly emaciated and developed spikes of temperature and acute abdomen. Abdominal examination revealed a cystic tender mass of about 24 weeks pregnancy size. On vaginal examination the mass was found to be separated from uterus.

Her ESR was 58 mm during first hour. All hematological and biochemical investigations including CA 125 and X-ray chest were normal. Ultrasound examination of the abdomen and pelvis revealed a large mass (10 X 15 cm) possibly

mucinous cyst adenoma of ovary with huge ascites. A clinical suspicion of primary ovarian carcinoma guided laparotomy. The operative findings were dense adhesions with a large pseudocyst occupying the lower and upper abdomen. The cyst got ruptured at the time of dissection and a brownish purulent fluid came out. The pelvic organs were matted and covered in dense adhesions. Both tubes were dilated and distorted. Both ovaries were inflamed.

Histological examination of the omental and peritoneal tissue confirmed the diagnosis of granulomatous lesion tuberculosis. The patient responded to antituberculous therapy.

Case-5

A 16 years old unmarried school girl presented with the complaints of distention of whole abdomen, rise of temperature and loss of body weight for two months. She had normal menstrual cycle with average flow. She used to take chocolate milk. On abdominal examination, her abdomen was hugely distended. No mass could be separately palpable. Her ESR was 40 mm in first hour. IgM for Mycobacterium tuberculosis was negative. CT scan suggested as a case of ovarian neoplasm. Ascitic fluid could not be aspirated. So, a decision was made for laparotomy. On laparotomy, the omentum and intestines were found matted together and there was a big pseudocyst. There were miliary seedling all over the peritoneal cavity. Pelvic organs were healthy. Biopsy was taken from the omentum and peritoneum of granulomatous tuberculosis. Four-drug anti tuberculosis regime was started and the patient responded well and she was completely afebrile within seven days following surgery.

Case-6

A 35 years old, divorced working woman from upper middle class family with history of a live pregnancy presented with complaints of evening rise of temperature for one month, weakness, loss of interest work, weight loss and menorrhagia for one cycle. On general examination, her temperature was 101°F. Abdominal and vaginal examination revealed no abnormality. Her ESR was 40 mm in first hour. Skiagram of chest was normal and IgM for Mycobacterium tuberculosis was positive. Diagnostic dilatation and curettage of endometrial cavity was

done and histopathology proved tuberculosis. Four-drug anti tubercular therapy was started and the patient showed improvement within a week.

Treatment regimen :

WHO recommended antitubercular drug regimen were suggested for all patients after histodiagnosis. Treatment was continued for six months according to following schedule

Tab. Rimstar 4FDC (each tablet contains Rifampicin 150 mg + Isoniazid 75 mg + Pyrazinamide 400 mg + Ethambutol 275 mg) - three tablets daily ½ hour before breakfast for first two months. Then Tab. Rimactazid 450 mg (each tablet contains Rifampicin 450 mg + 300 mg Isoniazid + Sodium Lauryl Sulphate) one tablet daily ½ hour before breakfast, continued for another four months.

Follow up

Response to treatment was assessed as subsidence of acute symptoms like pain and fever and development of a sense of well being and similar other indicators. The patients were followed up monthly for three months and then bimonthly.

Table-I

Summary of characteristics of patients with genital tuberculosis

		Numbers (total=6)	Percentage
Age in years	<20	2	33.34
	21-30	1	16.66
	31-40	3	50.00
Parity	0	2	33.34
	1	1	16.66
	2-4	3	50.00
Infertility		1	16.66
Menstrual disturbances	None	3	50.00
	Amenorrhoea	1	16.66
	Menorrhagia/ irregular cycle	2	33.34

Histopathological Examination of the specimens confirmed the diagnosis

Table-II*Summary of clinical presentations of patients with genital tuberculosis*

Clinical findings	Numbers (total=6)	Percentage
Abdominal pain/distention	5	83.30
Weight loss	4	66.64
anorexia	5	83.30
Exudative ascites	5	83.30
Pelvic /adnexal masses	4	16.66
Pleural effusion	0	0
Swinging temperature	4	66.64
Lathargy	3	50.00
CXR		
-Normal	5	83.30
-Pleural thickening	1	16.66
Laboratory findings		
- Raised ESR	6	100.00
- Raised CA 125	3(3 not tested)	50.00
Mantoux test		
- Not tested	4	
- Positive	1	
Negative	1	

CXR - chest X-ray, ESR - erythrocytes sedimentation rate, CA carcinogenic antigen

Table-III*Means of diagnosis in patients with genital tuberculosis*

Means of diagnosis of tuberculosis	Numbers (total=6)	Percentage
Operative procedure		
Endometrial biopsy	3	50.00
Laparotomy with biopsy (omental)	3	50.00
Operative findings		
Adhesion/frozen pelvis	2	33.32
Miliary seedling/nodules	1	16.66
Positive histological diagnosis	6	100.00
Positive cytological diagnosis	1	16.66

Discussion

Bangladesh is one of the highest tuberculosis prevalent country in the world. As tuberculosis of the female genital tract often manifest in an atypical manner, diagnosis may be missed if the entity is not considered in the differential diagnosis. Pelvic tuberculosis classically present with infertility, pelvic pain and poor general health with menstrual disturbances¹¹. However, the above cases demonstrate unusual presentations of pelvic tuberculosis, which often leads to a diagnosis of pelvic malignancy. The diagnosis of tuberculosis was not suggested by history, physical examination or chest X-ray as it was found in previous reports^{7,12,13,14}. Fortunately, three patients were suspected before laparotomy. In all six cases, anorexia, weight loss, abdominal swelling discomfort and ascitis were the common presentations. Pelvic mass with moderately raised CA 125 and ascitis lead to initial diagnosis of ovarian cancer, thus providing difficulties of making, diagnosis on clinical evidence. Infertility is said to be one of the common presentation of pelvic tuberculosis.^{15,16} In this series only one out of six cases had infertility of two years. This is similar to the finding of another study¹². However other classical presentations of pelvic tuberculosis including abdominal or pelvic pain, poor general health were common among the women in this series^{12,17,18}.

Out of six cases, three had normal menstruation which is comparable with findings of two other studies which reported that almost 87.7%⁹ and 78%¹² of the women with genital tuberculosis had normal menstruation. Only one women in this series had amenorrhoea and one presented with menorrhagia

Positive past history or detailed contact history may be helpful, but interestingly none of the patients had such histories. An Indian study reported 85% of the patients had positive history of tuberculosis¹⁶. Other studies reported only 10 to 25% association.^{19,20}

All the women in this series belonged to reproductive age group, similar to the previous reports^{12,13,17}. Age incidence varies between developed and developing countries. In developing countries pelvic tuberculosis is common between the age of 20 and 35 years whereas in developed countries, most patients are above the age of 40 years¹².

Endometrial biopsy were taken from three cases who presented with menstrual disturbances, and evidence of endometrial tuberculosis was found in all these cases. Although endometrial biopsy can provide a diagnosis of genital tuberculosis with high specificity, its low sensitivity of at most 50% makes it unsatisfactory as a screening test²¹.

In this small series both culture and staining have been inconsistent in diagnosing tuberculosis and the findings are consistent with that of another study¹². All the cases were diagnosed on histological evidence of the diseases. Isolation of Mycobacterium tuberculosis from genital tract is the confirmatory evidence for the diagnosis of genital tuberculosis although histological diagnosis by demonstration of granulomas has been universally accepted^{12,17,21}. This is because non-tuberculous causes of granulomas such as sarcoidosis, brucellosis and foreign body reaction can usually be ruled out. Tuberculin skin test is not a useful diagnostic aid and only suitable as screening test²².

Pelvic tuberculosis should be considered in the differential diagnosis of all cases presented with ovarian masses and ascitis, specially where the disease is common. Correlation of history and clinical findings with laboratory aids may help to have an accurate diagnosis and would prevent unnecessary surgery.

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