Case report

Pelvic tuberculosis with elevated Cancer Antigen 125 levels mimicking ovarian cancer

K R Tagore, A K S Ramineni

Introduction

Pelvic tuberculosis is a rare form of extra pulmonary tuberculosis which is difficult to diagnose because of the nonspecific clinical picture and radiological findings that can mimic malignancy. We report a young woman presenting with pelvic tuberculosis with high serum levels of CA 125. The patient responded well to treatment with anti - tuberculous drugs and her serum CA 125 level decreased to normal after six months of follow-up.

Case report

An 18 year old female presented with complaints of pain in the epigastric and umbilical regions of 3 months duration. The pain was dull aching, aggravated by food and relieved by vomiting. No history of hematemesis or melena was present. She was treated for dyspepsia with antacids and proton pump antagonists by a local practitioner without much relief.

The patient was unmarried. She had attained menarche at 13 years of age. The earlier menstrual cycles were normal, but she started having pain with increased flow during the last 5 months. No significant family history was present. The patient was afebrile and of average build at the time of admission. There was mild pallor. The examination of the heart and lungs were normal. There was vague tenderness in the hypogastrium and umbilical region. The abdomen was distended with a moderate amount of ascites. Hepatosplenomegaly was absent. Laboratory examination revealed a haemoglobin of 10.5g/dl, leukocyte count of 7,500/mm3; platelet count of 390,000/mm3; and erythrocyte sedimentation rate of 80 mm/1sthour. Blood sugar, blood urea and serum creatinine were within normal

Department of Pathology, MNR Medical College, Sangareddy, Andhra Pradesh, India.

Correspondence: K R Tagore, email: koyye_tagore@yahoo.com.

limits.

The serum CA 125 level was 657 U/ml (normal, less than 35 U/ml), and the serum CA 19-9, carcinoembryonic antigen and alpha fetoprotein values were within the normal limits. Chest X-ray was normal. Ascitic fluid glucose was 70 mg/dl, protein 4.5 g/dl and sediment smears showed plenty of mature lymphocytes, reactive mesothelial cells, a few histiocytes and occasional atypical or possibly degenerate cells. The ascitic fluid CA 125 level was markedly elevated at 736U/ml (normal range between 10-30 U/ml).Urine examination was normal.

Ultrasound showed adnexal masses of 5x3.5x3.7cm on right side and 7.1x4.2x3.9cm on the left side with variable echogenicity. The uterus was normal in size. The adnexae were not visualized separately. Omentum was thickened with nodules. There was minimal free fluid in the peritoneum. Hepatosplenomegaly was not evident. CT scan showed a normal uterus with bilateral adenexal masses, areas of necrosis and irregular borders. The omentum and the peritoneum were thickened and contained small tumour-like nodular densities mimicking a neoplastic process. Para-aortic and iliac lymph nodes were enlarged.

Upper GI endoscopy showed gastric erosions. Lower GI endoscopy was unremarkable. Endoscopic biopsy from the stomach showed mild chronic active gastritis. Laparoscopic biopsies were taken from the adnexal masses and omental nodules. Microscopic examination of all the specimens showed tuberculous epitheloid granulomas with Langhan type giant cells and caseating necrosis (Fig. 1). Ziehl-Neelsen stain was positive for acid-fast bacilli.

The patient was treated with anti tuberculous drugs. She responded to treatment and her initial clinical symptoms and signs disappeared. The serum CA 125 level had decreased to 210 U/ml one month later and to 18 U/ml after six months.

Discussion

Pelvic tuberculosis remains a global health problem, primarily in developing countries where insufficient health services and high human immunodeficiency virus prevalence has increased the burden of disease. The disease can mimic many conditions, including bowel disease, malignancy and other infectious diseases.

CA 125 is a soluble glycoprotein which is raised in 80% of patients with ovarian malignancy (1). However it is a non-specific marker of ovarian cancer and may be a misleading parameter, as it is elevated in a variety of conditions such as infections, tuberculosis, endometriosis,

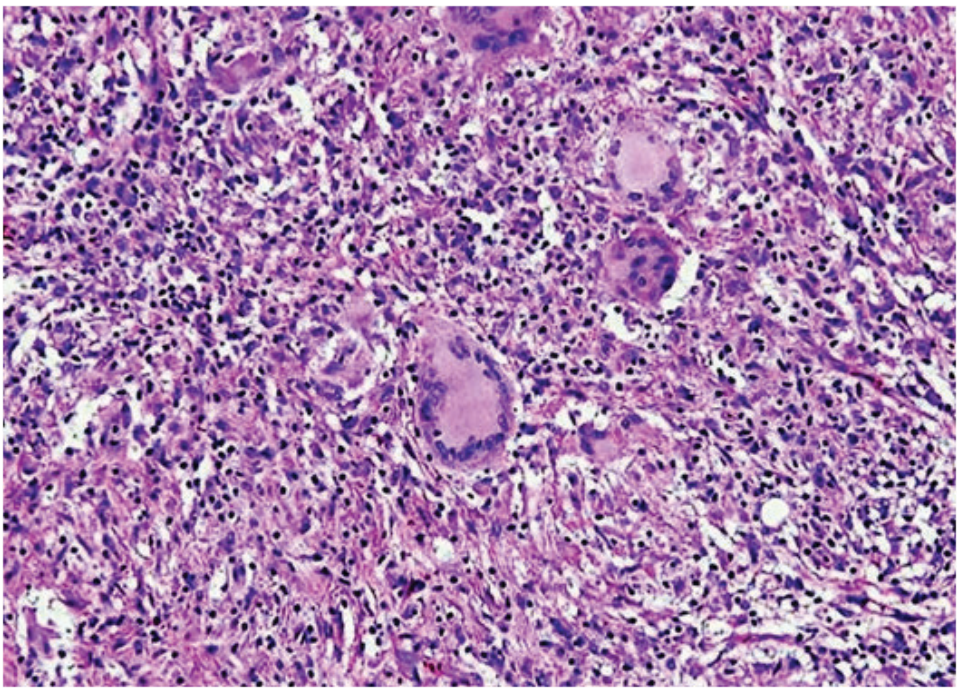

Fig. 1-Tuberculousepitheleoid granuloma with Langhan type giant cells.(H & E x 400).

Meig's syndrome, menstruation, ovarian hyper stimulation and a number of non-gynaecologic conditions like active hepatitis, acute pancreatitis, pericarditis, pneumonia (2,3,4), biliary duct cancer, periampullary tumours,(5), cholangitis (6) and cancer of the pancreas (1). CA 125 is a glycoprotein antigen expressed by tissues of the coelomic epithelium including the ovarian epithelium, fallopian tubes, endometrium and endocervix as well as the mesothelial lining cells of peritoneum, pleura, and pericardium. Any physiological or pathological reaction of these cells to menstruation, inflammation of any cause, trauma, or tumoral involvement, causes an increase of serum CA 125 level.

The primary focus of pelvic tuberculosis is the fallopian tubes, which are almost always affected (5,6). Pelvic tuberculosis occurs more frequently in women and typically presents with pelvic pain, infertility, poor general health or menstrual disturbances. However, less common presentations include an adenexal mass, ascites or both and thus can be difficult to distinguish from an ovarian malignancy (1,5).Pelvic tuberculosis is usually caused by reactivation of the disease following systemic dissemination of Mycobacterium tuberculosis during the primary infection. Direct transmission between sexual partners has been documented. Spread from other intra peritoneal foci is rare (7).

As tuberculosis requires only medical management, it has been suggested that in cases of an abdomino -pelvic mass with or without ascites, a high serum CA125 should always raise

a suspicion of tuberculosis and a laparoscopy combined with biopsy should be performed to confirm the diagnosis. This will prevent unnecessary laparotomies. Moreover, serum CA125 can be used to monitor the response of disease to anti-tuberculosis treatment (8).

References

1. Gadducci A, Cosio S, Carpi A, Nicolini A, Genazzani AR. Serum tumor markers in the management of ovarian, endometrial and cervical cancer. *Biomedicine and Pharmacotherapy* 2004;58:24-38.
2. Sinha P, Johson AN, Chidamberan-Pillai S. Pelvic tuberculosis: an uncommon gynaecological problem presenting as ovarian mass. *British Journal of Obstetrics and Gynecology* 2000; 107:139–40.
3. Groutz A, Carmon E, Gat A. Peritoneal tuberculosis versus advanced ovarian cancer: a diagnostic dilemma. *Obstetrics and Gynecology*1998; 9:868.
4. DiSaia PJ, Creasman WT. Clinical Gynecologic Oncology, 5th edition, 1997:290–1, 536–9
5. Nistal de Paz F, Herrerofernandez B, Perez Simon R, et al. Pelvic-peritoneal tuberculosis simulating ovarian carcinoma: report of three cases with elevation of the CA 125. *American Journal of Gastroenterology* 1996; 91: 1660–1.
6. Ng WW, Tong KJ, Tam TN, Lee SD. Clinical values of CA19-9, CA125 and CEA in malignant obstructive jaundice. *Zhonghua Yi XueZaZhi* (Taipei) 1995; 55:438-46.
7. Gattani AM, Mandeli J, Bruckner HW. Tumor markers in patients with pancreatic carcinoma. *Cancer*1996; 78:57-62.
8. Chen CY, Shiesh SC, Tsao HC, Lin XZ. The assessment of biliary CA 125, CA 19-9 and CEA in diagnosing cholangiocarcinoma – the influence of sampling time and hepatolithiasis. *Hepatogastroenterology* 2002; 49:616-20.
9. Thakur V, Mukherjee U, Kumar K. Elevated serum cancer antigen 125 levels in advanced abdominal tuberculosis. *Medical Oncology* 2001;18(4):289-91.