Bangladesh Journal of Medicine (BJM)
ISSN : 1023 - 1986
eISSN : 2408 - 8366

CASE REPORT

A VERY HIGH CA-125 LEVEL IS NOT ALWAYS MALIGNANT: A CASE-BASED EXPERIENCE FROM TUBERCULOSIS PATIENT

MD. AHSAN HASIB[1], WASI DEEN AHMED[2], ABDULLAH AL MASUM[3], MOHAMMAD TANVIR ISLAM[4]

Abstract:
CA-125 is a serum marker that is raised in various malignant and non- malignant conditions, but a very high rise (>1000 U/mL) almost always suggests ovarian malignancy. Here we report a rare case of tuberculous peritonitis in a 58-year-old woman who presented with gradually progressive abdominal distension and weight loss, and her CA-125 level was >1000 U/mL. Initially suspecting this as a case of ovarian malignancy, ascitic fluid study to detect malignant cells and a contrast CT scan of the abdomen was done, but the results didn't suggest any malignancy. Finally, diagnostic laparoscopy was done and tuberculous peritonitis was diagnosed by peritoneal biopsy and histopathology. This case is an excellent example showcasing the importance of tissue diagnosis over indirect supportive tests, and it also suggests that clinical suspicion of tuberculosis in an endemic zone should always be there even if the patient has very high CA-125 level.

Received: 27.11.2022 *Accepted: 12.12.2022*
DOI: https://doi.org/10.3329/bjm.v34i1.63427

Citation: *Hasib MA, Ahmed WD, Masum AA, Islam MT. A very high CA-125 level is not always malignant: A Case-based experience from tuberculosis patient . Bangladesh J Medicine 2023; 34: 49-51.*

Introduction:

CA-125 is an epithelial marker derived from the coelomic epithelium. As a serum marker, the test has good acceptability to suggest malignant conditions with a valid sensitivity and specificity. Its use in the diagnosis of ovarian cancer has been widely practiced, particularly on occasions where the level is very high and crosses 1000 U/mL. However, the serum level of this cancer antigen is not undisputed and different levels of increase are being observed in non-malignant conditions like tuberculosis, acute pancreatitis, chronic liver disease, infections, etc. although CA-125 level >1000 U/mL is very unlikely in these non-malignant conditions.[1,2]. Here, we are reporting a case of tuberculous peritonitis where the serum concentration level of CA-125 was >1000 U/mL and progressively improved with appropriate treatment.

Case Report:

A 58-year-old, normotensive, non-diabetic lady was admitted to the hospital with abdominal distention and weight loss for 1 month.

Abdominal distention was insidious and gradually progressive and without pain or visible edema in any other parts of her body. She also had anorexia and unintentional weight loss, evidenced by loosening of her clothes. Her history was not clinically suggestive of any respiratory, cardiac or hepatic illness as a cause for the abdominal distension.On examination, the patient was moderately anemic, non-icteric and, there was no leg edema, lymphadenopathy, thyromegaly, or any other stigmata of chronic liver disease. JVP was not raised. Vitals were within the normal limit. On abdominal examination, ascites was

1. Resident, Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
2. Resident, Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
3. Assistant Professor, Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh
4. Associate Professor, Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh

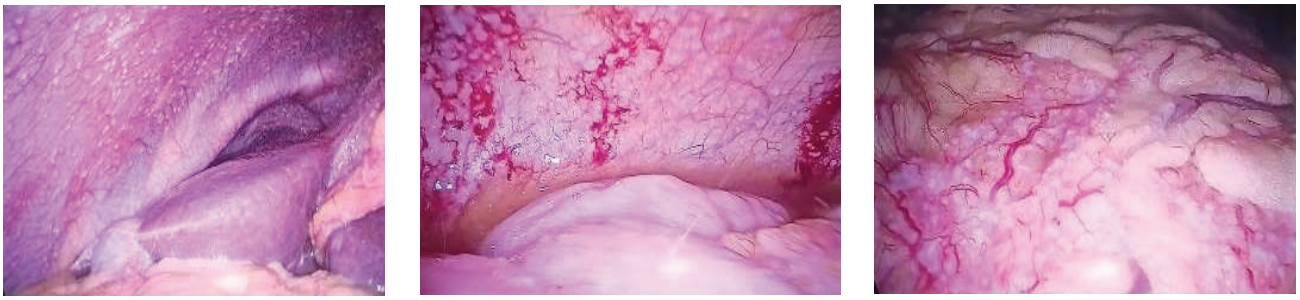
Address of Correspondence: Dr. Md. Ahsan Hasib, Resident, Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Dhaka, Bangladesh. E-mail: ahsan50rmc1000@ 1000@gmail.com

only physical finding. Other system examinations revealed no abnormalities.

Considering the clinical scenario and endemic persistence of tuberculosis (TB) in Bangladesh[3], a diagnosis of TB was at the top of the list. But other causes of ascites and weight loss were needed to be excluded parallel to the confirmation of TB.

Complete Blood count showed normal cell count and the ESR was 19. Other routine investigations like Urine R/E, Serum Creatinine, Serum Electrolytes, RBS, and Chest X-Ray P/A view were normal. Her Mantoux test was marked as positive (16mm). Her ascitic fluid was straw-colored and showed Lymphocyte rich exudative fluid with high ADA (68.01 U/L) which was suggestive of tuberculous peritonitis.[4]

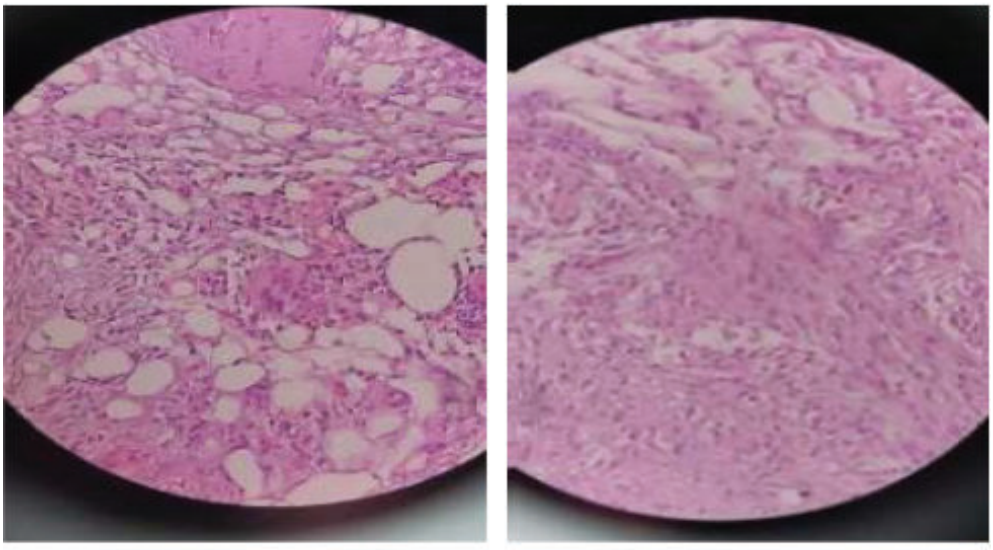
There was no malignant cell in the ascitic fluid. Her CA-125 level was 1122.00 U/mL upon admission, and a repeat test after 10 days also showed very high level (1770 U/mL). USG of the Whole Abdomen and CT scan of the abdomen with contrast were done to further evaluate and exclude any malignancy, specially ovarian one, but other than marked ascites no other findings were evident in those imaging studies. Due to very unusual rise of CA-125 level, a more rigorous effort was demanded to exclude any malignancy. A diagnostic laparoscopy was done which detected miliary seedling in the total parietal wall of the peritoneum with omental cake and ascites (Figure 1). Histopathology report of the biopsied sample from the peritoneum revealed features of granuloma with suggestive findings of tuberculosis (Figure 2).



(A) (B) (C)

Fig.-1: *Photographs of peritoneum taken during diagnostic laparoscopy.*
Panel A and B shows miliary seedling. Panel C shows omental cake in the peritoneum

The patient was started on category 1 Anti-tuberculous regimen with 4 drugs (Isoniazid, Rifampicin, Ethambutol and Pyrazinamide). At the end of the week patient improved clinically. Two weeks after starting the Anti-TB drug, a repeat CA-125 testing was done and this time the level was 300 U/mL.



A B

Fig.-2: *Histopathological picture of peritoneal biopsy*

Discussion:

The patient had ascites and weight loss with strikingly high CA-125 levels. Screening for TB was positive, however, such a high level of CA-125 demanded the exclusion of ovarian malignancy with metastasis. Finally, peritoneal biopsy and histopathology showed granulomatous inflammation histologically consistent with tuberculosis and diagnosis of TB was confirmed.

CA-125 is a cell-surface glycoprotein that may be present in different parts of female reproductive system such as fallopian tubes, endometrium and in the ovarian surface epithelium. It was Bast *et al.* in 1981 who first detected its expression in ovarian carcinoma(5). It is often used to treat and follow-up patients with ovarian malignancy. Serum CA- 125 levels may also be elevated in many non-malignant conditions such as infections, ovarian hyperstimulation, menstruation and non-gynecological conditions like acute pancreatitis, active hepatitis, etc. It is widely suggested that CA-125 titers higher than 1000 U/mL often correlate with malignancy.(6) But there are some case reports that also shows findings similar to us where a non-malignant condition can raise very high amount of this serum marker.(7)

The case highlights the importance of establishing histopathological diagnosis over supportive indirect tests. Even though diagnostic laparoscopy was needed, it saved the patient from psychological trauma and an unnecessary array of treatments as malignancy was excluded. A very high level of CA-125 level alone is not enough to establish a diagnosis of malignant ovarian carcinoma and should be evaluated until confirmed histopathologically.

Conflict of Interest:

The author stated that there is no conflict of interest in this study

Funding:

No specific funding was received for this study**.**

Ethical consideration:

The study was conducted after approval from the ethical review committee. The confidentiality and anonymity of the study participants were maintained.

Acknowledgement:

Thankful to all doctors, nurses and medical stuff of Department of Department of Internal Medicine, Bangabandhu Sheikh Mujib Medical University, Bangladesh for their best and kind support for collection of data for this study.

References:

1. Tolman CJ, Vaid T, Schreuder HW. Extremely elevated CA-125 in benign ovarian disease due to a stretch of the peritoneum. BMJ case reports. 2012;2012. https://doi.org/10.1136/bcr-2012-006664. PMid:23188839 PMCid:PMC4543764
2. Up-to-date. Conditions associated with an elevated serum CA 125 concentration. https://www.uptodate.com/contents/image?imageKey =OBGYN%2F81621.
3. Nayeem J, Salek MAJMJoM, Research B. Tuberculosis Endemic in Bangladesh. 2015;2(2):71-6. https://doi.org/10.18034/mjmbr.v2i2.392
4. Kang SJ, Kim JW, Baek JH, Kim SH, Kim BG, Lee KL, et al. Role of ascites adenosine deaminase in differentiating between tuberculous peritonitis and peritoneal carcinomatosis. 2012;18(22):2837. https://doi.org/10.3748/wjg.v18.i22.2837 PMid:22719194 PMCid:PMC3374989
5. Bast R, Feeney M, Lazarus H, Nadler LM, Colvin RB, Knapp RCJTJoci. Reactivity of a monoclonal antibody with human ovarian carcinoma. 1981;68(5):1331-7. https://doi.org/10.1172/JCI110380. PMid:7028788 PMCid:PMC370929
6. Piura B, Rabinovich A, Leron E, Yanai-lnbar I, Mazor MJEjogo. Peritoneal tuberculosis mimicking ovarian carcinoma with ascites and elevated serum CA-125: case report and review of literature. 2002;23(2):120-2.
7. Hussain SF, Grayez J, Grigorian A, Green JT. Massive pleural effusion and marked increase of CA- 125. 2004;80(943):300-1. https://doi.org/10.1136/pgmj.2003.012377. PMid:15138325 PMCid:PMC1743006