

Short Communication

HIGH CA-125 LEVEL IN CIRRHOSIS OF THE LIVER

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INTRODUCTION

Cancer Antigen (CA-125) is an antigen which is a high molecular mass glycoprotein, high levels of which have been found in ovarian cancer and has been used for monitoring the course of epithelial ovarian tumors¹. This has also been found elevated in other benign and malignant disease as well as non gynecological benign disorders^{2,3,4}. CA-125 has also been found elevated in chronic liver disease specially that associated with ascites^{5,6}. Cases have occurred in which the ascites has been present and no liver disease has been documented, or suspected, with elevated CA-125 level and patients have been subjected to exploratory laparotomy and later found to have no malignant disease but the elevated CA-125 level was due to cirrhosis of the liver⁷. Described here is a case of ascites in a patient with elevated CA-125 who had no definite pre-operative evidence of liver disease and was subjected to exploratory laparotomy to evaluate for malignant disease of the ovaries or other abdominal organs but none was found. Instead, during surgery, she was found to have cirrhosis of the liver and subsequently, serological

markers of hepatitis B were found to be present.

CASE REPORT

This patient was 64 years old female who presented with abdominal swelling of 6 weeks duration. She had history of non-insulin dependent diabetes mellitus and hypertension and was taking Dibenclamide, Metformin and Amlodipin. Her physical examination showed distended abdomen with fluid thrill. Her vital signs were normal. Peripheral edema was present and she was moderately obese. Laboratory findings showed hemoglobin 16.5 g/dl, hematocrit 46.9% WBC count was 6500/ul, platelet 224000/ul, Fasting Blood Sugar 119 mg/dl, total bilirubin 0.6 mg/dl, direct bilirubin 0.4 mg/dl, AST 46 U/l, ALT 26 U/l, alkaline phosphatase 221 (Normal 39 - 117 U/l) Serum albumin was 3.3 g/dl (Normal 3.5 - 5.0 g/dl), creatinine 0.6mg/dl. Hepatitis B surface Antigen was negative and so was anti HCV. Thyroid profile was normal. CA-125 level was 484 and after one week, repeat level was more than 500 U/ml (Normal 1.7 - 32 U/ml). Chest X-Ray was normal and abdominal sonography showed massive ascites and cholelithiasis. CT scan of the abdomen and pelvis showed massive ascites and no abnormal masses were noted and pancreas and ovaries were found to be normal. Ascitic fluid was sent for examination and total leucocyte count was 200 cells/ul with 50% of lymphocytes and total protein of 2.4 g/dl. Ascitic fluid cytology was negative for malignant cells. She underwent exploratory laparotomy at which time no malignancy of the ovary or any other organs of the abdomen was found. Liver

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was noted to be small and shrunken and a biopsy was taken which was reported as cirrhosis of the liver. There were no changes of steatosis. On re-evaluation, her total core antibody (HB core total IgG) was positive. She was treated with Diuretics and continued on other medical treatment.

TABLE - I

Condition with elevated CA-125^{1,2,3,4,8,9}

Malignant

Carcinoma of
Ovary
Endometrium
Endocervix
Liver
Stomach
Lung
Breast
Pancreas
Colorectum

Benign

Cirrhosis of the liver
Tuberculous peritonitis
Spontaneous bacterial peritonitis
Endometriosis
Pelvic Inflammatory disease
Ovarian hyperstimulation
syndrome
Benign ovarian cyst
Ectopic pregnancy

DISCUSSION

This patient had high level of CA-125. No malignant disease was found on extensive imaging studies and abdominal exploration. Cirrhosis of the liver was demonstrated and serological Marker of remote hepatitis B was found which was responsible for cirrhosis of the liver and massive ascites. Pre-operatively, it was difficult to determine as if the clinical picture was due to liver cirrhosis, especially in elderly female, in whom higher incident of ovarian cancer is common. Cancer antigen 125 has been used for monitoring of the course of epithelial

ovarian tumors and has been elevated in over 80% of the histologically proven ovarian carcinoma⁸. However, it is also noted to be present in several other malignant and non-malignant conditions of pelvic organs, which include endometriosis, pelvic inflammatory disease, carcinoma of endometrium and colorectum and chronic liver disease. Among the chronic liver disease, most common is liver cirrhosis and hepatocellular carcinoma⁸. Studies have shown that CA-125 is highly sensitive marker to detect the ascites in the patient with liver cirrhosis⁸. Several common malignant and non-malignant conditions, which have resulted in elevated CA-125 are shown in table-I.

There are two important sources of CA-125, which are epithelium of ovary and peritoneum⁹. It has been suggested that CA-125 is probably synthesized by peritoneal epithelium in response to internal mechanical stress formed by the presence of ascites and then it passes from the peritoneal cavity to the serum through the peritoneum⁶. However, external stress in the form of physical examination may have influence on the serum CA-125 but this has not been scientifically substantiated⁹. Several studies have shown that the CA-125 is only a marker of presence of fluid in the peritoneum, independent of underlying primary cause, and this be considered as a non specific marker^{1,2,3,4,5,6,7,8,9}. The hypothesis that CA-125 may be synthesized by the peritoneal epithelial cells has been supported by the observation that, after large volume paracentesis⁸, there is a rapid decline of serum level of this marker as early as 48 hours after paracentesis⁸. There is no level of CA-125 which can indicate that the elevated level may be from benign or malignant disease¹⁰.

CONCLUSION

This case illustrated the more specific nature of cancer antigen CA-125 found in this case with cirrhosis of the liver but malignant disease was strongly suspected. This would necessitate the awareness of the presence of high level of CA-125 in non-malignant conditions and in some cases, it may be possible to avoid invasive procedures like exploratory/laprotomy.

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