

Case Report



High CA-125 in Endometrioma: An Unusual Presentation

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Abstract

CA-125 (cancer antigen 125, carcinoma antigen 125, or carbohydrate antigen 125) also known as mucin 16 or MUC16 is a protein of mucin family glycoprotein that is encoded by the MUC16 gene. It is the most frequently used biomarker for ovarian cancer. It may also be elevated in other cancers, including endometrium, fallopian tube, lung, breast and gastrointestinal cancer and in a number of relatively benign conditions, such as endometriosis, menstruation and pregnancy. High plasma levels of more than 200 U/mL are usually suggestive of malignancy but rarely found in benign conditions of female genital tract, like endometriosis. Very high CA-125 level is suggestive of ovarian malignancy, was noted in case of ovarian endometrioma. This paper describes a case of a 36 years old lady, mother of 2 children, was admitted with large abdominal mass and abdominal pain. CA-125 was found 3500 U/ML. Ovarian malignancy was suspected. During laparotomy, ruptured endometrioma was noted and it was supported by histopathological report which mentioned, "No malignancy seen". Endometrioma can't be excluded in high CA-125 level even without features of endometriosis.

Keywords: Ovarian endometrioma, CA-125, Ovarian malignancy

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Introduction

Cancer antigen 125 (CA-125) is expressed in epithelial tissues physiologically. Examples include tissues of müllerian origin such as the endometrium, endocervix, and fallopian tubes; and those of coelomic origin such as the pleural mesothelium, pericardial, and peritoneal. CA-125 has also been found in the conjunctiva.¹ The most common use of the test is the monitoring of people with cancer because around 75% to 85% of women with epithelial ovarian cancer will have an elevated CA-125 level. In the patient who is being evaluated for a pelvic mass, a CA-125 level greater than 65 is associated with malignancy in approximately 90% of cases. CA-125 level can be elevated in a number of benign conditions, including pregnancy, endometriosis, uterine fibroids (benign tumors), pancreatitis, normal menstruation, pelvic inflammatory disease, and cirrhosis of the liver. Benign tumors or cysts of the ovaries can also cause an abnormal test result. It also increases in cancers other than ovarian cancer, including

malignancies of the uterine tubes, endometrium, lung, breast, pancreas, and gastrointestinal tract as well as lymphoma. Endometriosis is a chronic disease that affects up to 16% of subfertile women. It occurs when endometrium is found outside the uterus, most commonly in the pelvis on the ovaries (sometimes forming an ovarian cyst full of blood known as an endometrioma), fallopian tubes, uterus, lining of the pelvis, bladder and the bowe¹² Endometriosis is generally more common in Caucasian women in their late 20's and 30's. It is associated with inflammation of the surrounding tissue. CA-125 can be slightly elevated in women who have endometriosis. In general, levels of CA-125 in excess of 35 U/ml are considered elevated and may be suggestive of endometriosis.¹ Very high CA-125 is not truly diagnostic test for ovarian cancer. Few case reports are found where CA-125 was noted more than 2000 U/ml which was suggestive of malignancy but ultimate diagnosis was endometrioma. So careful clinical evaluation is needed in such cases.

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Case report

Patient, 36 years old lady, para 2, was admitted in Gynaecology Department on July 2017 with acute abdominal pain for one-day duration. She did not give any history of heavy menstrual bleeding, dysmenorrhea, dyspareunia that could suggest endometriosis. Per abdominal examination revealed a large ovarian mass, 13X15 cm size with CA-125 level 3500 u/ml. Laparotomy was done. Ruptured endometrioma was noted intraoperatively. Left salpingo-oophorectomy was done. Subsequently, CA-125 level decreased to 305 U/ml within 2 weeks of surgery and histopathology also confirmed endometrioma.

Discussion

In 1981 Bats and colleagues first described CA-125, a 200 kd glycoprotein recognized by the murine monoclonal antibody OC 125 as a marker for epithelial malignancies.³ It is raised in the serum of 82% of women with epithelial ovarian cancer but in only 1% of healthy blood donors.³ Epithelial ovarian cancers with low or normal levels of CA-125 are usually mucinous tumors. The antigen is not specific to ovarian cancer as raised serum levels may also be found in 29% of other cancers (lung, breast, pancreas, and colorectum) and in 6% of women with nonmalignant conditions such as cirrhosis with ascites, acute pancreatitis, ovarian cysts, endometriosis, and pelvic inflammatory disease. In normal women, plasma concentrations of CA-125 are increased slightly at ovulation and significantly during menstruation. Marked increases are observed during pregnancy and following peritoneal irritation by infection or surgery. So, It can be said that CA-125 in normal women is mainly derived from the endometrium and the irritated peritoneum.⁴ The sensitivity and specificity of serum CA-125 for the diagnosis of endometriosis were 61.1% and 87.5% respectively. Elevated CA-125 (>35 U/ml) was noted in 65/75 cases 86.70% with advanced endometriosis, but in only 15/56 patients 26.8% with minimal and mild endometriosis.⁵ There is evidence that peritoneal mesothelial cells are even more potent than ovarian cancer cells in producing CA-125.⁵ The overflow of thick, 'chocolate' cyst fluid in the peritoneal cavity causes endometriosis-induced peritoneal inflammation⁶ which leads to excess CA-125 in the circulation. In addition, superficial endometrial implants over the ovary may secrete CA-125 into the peritoneal cavity which further gets reabsorbed slowly into the circulation.⁷ In literature review, not many cases were found which showed very high CA-125 with endometrioma. Usually endometrioma with high CA-125 that are reported, showed value between 200-2000 U/ml. So, in that ground, This case is a rare one and showed much diagnostic dilemma.

Conclusion

Malignant ovarian cancer is not the ultimate conclusion for very high CA-125 level. Endometrioma could be the differential diagnosis of elevated CA-125 level.

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