Case Report

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Highly Elevated CA125 and Tubo-Ovarian Abscess Mimicking Ovarian Carcinoma

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Key Words

Ca125
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Salpingitis
Ovarian mass

Abstract

Elevated serum CA125 levels may be caused by any condition which produces peritoneal irritation as well as by the presence of various malignancies. This report of a case with atypical presentation of tubo-ovarian abscess and CA125 level of 1,160 U/ml serves to re-emphasize cautious operative planning in patients desirous of reproductive capability in the face of findings highly consistent with probable malignancy. This is the highest reported serum CA125 level in a reproductive age woman with well-documented reversible benign disease.

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Introduction

It is well documented that serum CA125 elevation in reproductive age women may be due to a variety of benign conditions including endometriosis, salpingitis, ectopic pregnancy, and benign ovarian neoplasms [1-5]. The highest levels have been reported in endometriosis (760 U/ml) [5] and salpingitis (550 U/ml) [6]. Usually levels in these diseases are much lower and the clinical presentation in these conditions differs markedly from that of advanced ovarian carcinoma. However, even in younger patients a complex pelvic mass in the presence of a CA125 level in excess of 500-1,000 U/ml would strongly support the possibility of malignancy. Conservative surgical therapy may be advisable in the former conditions but not in advanced ovarian carcinoma.

Report of a Case

The patient, a 30-year-old G4 PI Ab3 woman presented to an emergency room with symptoms of vague abdominal pain with nausea, emesis and increasing abdominal girth. Initially the pain had involved the right upper quadrant. The patient was divorced and denied sexual activity. On admission she was afebrile with normal vital signs. Physical examination was reported as remarkable only for the findings of a moderately distended but soft abdomen, tender primarily in the right upper quadrant. The pelvic examination was reported as completely normal by a general surgery consultant. Laboratory evaluation showed a leukocyte count of 9,100/ μ l without a left shift, hemoglobin of 8.4 g/dl, SGOT of 108 IU/ml (normal range 7-40 IU/ml), SGPT of 175 IU/ml (normal range 7-40 IU/ml, alkaline phosphatase of 118 IU/ml (normal range 45-110

IU/ml). She underwent an extensive workup with plain abdominal films, right upper quadrant and pelvic ultrasound, nuclear hepatobiliary scan, barium enema, and subsequently a CT scan. Findings were limited to bilateral complex pelvic masses filling the pelvis with a moderate left hydronephrosis and bilateral pleural effusions.

Except for a few low-grade temperature elevations to 38 °C, the patient improved with observation only and was discharged with a referral to the City of Hope National Medical Center for evaluation

of her pelvic masses. On re-evaluation 2 weeks after symptom onset, the patient reported some residual generalized abdominal discomfort but remained afebrile. Examination revealed a benign abdomen, normal external genitalia, no vaginal or cervical lesions or discharge, and no cervical motion tenderness. The uterus was normal size, mobile, and separate from palpable bilateral 10 cm nontender adnexal masses which were partially fixed. Stool guaiac was negative for occult blood. Her leukocyte count remained normal, hemoglobin had risen to 10 g/dl on iron therapy, and liver enzymes had normalized. Serum CA125 returned 1,160 U/ml, with normal β -HCG, CEA, and AFP. Cervical cytology was within normal limits.

The patient was counselled regarding the possibility of ovarian carcinoma in light of bilateral complex adnexal masses, pleural effusions and a highly elevated CA125. An exploratory celiotomy was performed with the findings of extensive pelvic and perihepatic adhesions, and bilateral pelvic masses which appeared inflammatory primarily involving the Fallopian tubes. Extensive biopsies and washings were taken and all returned negative for malignancy, consistent with acute and chronic inflammation only. Bilateral salpingotomies were productive of purulent material which was sent for culture and sensitivity. Since the appendix was involved in the inflammatory process it was removed. The adnexal complex on the left was densely adherent to the side wall, above which the hydroureter was noted. These adhesions were released. Copious irrigation was performed but no further surgery was deemed indicated at the time since the patient expressed a desire for future childbearing. Postoperatively the patient recovered uneventfully on ampicillin, gentamicin and clindamycin therapy, remaining afebrile without leukocytosis throughout. Final pathology review of the multiple biopsies confirmed absence of malignancy; the appendix showed serositis only and washings were negative for malignant cells. Culture of the intra-peritoneal purulent material revealed single species coagulase-negative *Staphylococcus epidermidis*. Serum CA125 levels slowly decreased over the following month to normal levels where they remained. The patient is free of disease with normal pelvic anatomy by exam and ultrasound 1 year after surgery.

Discussion

The preoperative diagnosis is often in question when faced with a pelvic mass. In postreproductive women contingency planning regarding the possible extent of surgery can be extensive, but is constructed around removal of the reproductive organs. In younger patients, fertility issues represent an added, sometimes overriding, concern. It is well known that serum CA125 can be elevated in various benign conditions ranging from no identifiable pathology [7] to functional cyst formation to malignancy. It is also accepted that in rare cases of endometriosis/salpingitis high levels may be seen, but usually these levels are in the low hundreds [1, 5, 8]. Extremely rare serum CA125 levels from 2,200 to 5,000 U/ml have been reported in benign disease but either resulted in hysterectomy and adnexectomy or the outcome and nature of disease was not clearly delineated [2, 9]. Benign versus malignant discriminatory levels well above the 35-65 U/ml cutoff values have been suggested and refuted [9, 10]. From

the body of existing literature, when faced with a complex pelvic mass with or without other findings suggestive of malignancy a serum CA125 in excess of 1,000 U/ml may lead a clinician to consider extirpation of the reproductive organs irrespective of intraoperative findings. This case report should caution against such an approach, emphasizing that no strict cutoff for malignancy should be employed. Liberal use of frozen section analysis may be helpful, but even if equivocal results are obtained a reoperation may be preferable to unnecessary sterilization.

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