

Abnormally high level of CA-19-9 in a benign ovarian cyst

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CA-19-9 antigen is mainly elevated in cases of gastrointestinal tract malignancy, including of the pancreas, colorectum, and biliary tract. CA 19-9 antigen can also be elevated in ovarian mucinous neoplasms, however, as well as in many benign conditions. Markedly raised levels of more than 10,000 U/mL were almost observed in advanced stage of malignancy. We report herein the case of a 37-year-old woman who presented with an abnormally high level of CA 19-9 antigen associated with benign mucinous cystadenoma.

Keywords: CA 19-9 antigen; Cystadenoma, mucinous; Tumor markers, biological

Introduction

Tumor markers are widely used in clinical practice to determine therapeutic efficacy, to detect recurrence and to predict prognosis in known cancers. Markers for ovarian cancer include CA-125 antigen, CA-15-3 antigen, and carcinoembryonic antigen (CEA), among others. However, because of their inaccuracy, the use of serum tumor markers for cancer screening is limited [1].

CA-19-9 antigen is a monosialoganglioside secreted by mucinous tumors of the gastrointestinal tract, including those of the pancreas and biliary tree [2]. CA-19-9 antigen can be elevated in many malignancies, including colorectal carcinoma, pancreatic adenocarcinoma and epithelial ovarian carcinoma, and elevated levels can also appear in many benign conditions. However, markedly raised levels of more than 10,000 U/mL were almost observed in advanced stage of malignancy [3]. Herein we report a case of an abnormally high CA-19-9 level associated with a benign ovarian cyst.

Case report

A 37-year-old woman (gravida 1, para 1, abortion 1) presented with abdominal pain which had begun 3 days prior. She also complained of nausea and dizziness. Her menstrual cycles were regular, she had no history of dysmenorrhea,

dyspareunia or leukorrhea. Her medical history was normal. She had a history of a cesarean delivery. On examination, mild tenderness and rebound tenderness was present in the right lower abdomen. A computed tomography scan of the abdomen showed a large, biloculated, enhancing, thin-walled cystic mass arising from the left ovary (Fig. 1). It measured approximately 10×10×6.5 cm. There was also a large amount of ascites. The findings were suspicious for benign or borderline epithelial tumor of the left ovary. The pancreas, gallbladder, spleen, both kidneys, and both adrenal glands appeared normal. CA-19-9 level was increased to 2,753 U/mL (normal range, 0 to 27 U/mL), CA-125 antigen was 80 U/mL (normal range, 0 to 35 U/mL), and CEA was 6.5 ng/mL (normal range, 0 to 4.7 ng/mL). The patient's white blood cell count was 3,800/μL (normal range, 4,000 to 10,000/μL) and he-

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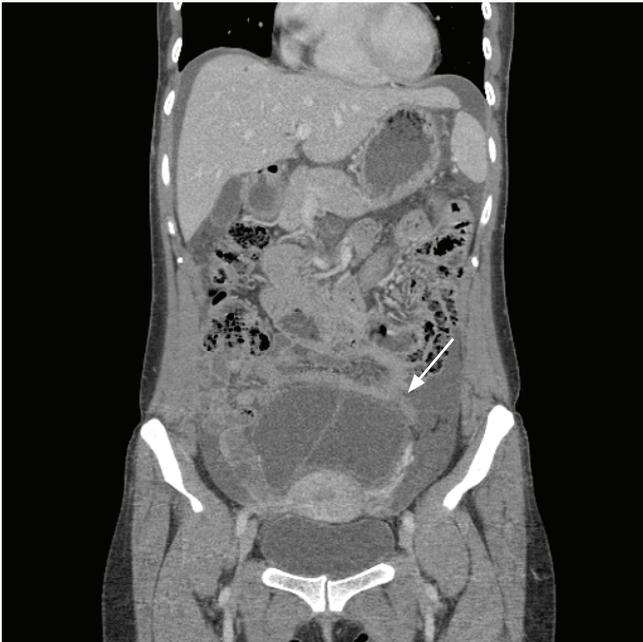


Fig. 1. Contrast-enhanced computed tomography revealed a bilobulated, enhancing cystic mass in the pelvic cavity.

moglobin was 9.1 g/dL (normal range, 12 to 16 g/dL). Other laboratory tests were within normal range. On laparoscopy, a large cystic mass arising from the left ovary was observed. The mass was partially ruptured. Left salpingo-oophorectomy was performed. Intraoperative frozen section examination revealed benign mucinous cystadenoma. Extensive histological sectioning of the cysts confirmed this diagnosis. After surgery, CA-19-9 antigen, CA-125 antigen, and CEA levels returned to within normal range.

Discussion

The diagnosis of epithelial ovarian cancer is difficult because the symptoms and signs are vague and nonspecific. Many gynecologic oncologists have sought to develop screening tools for ovarian cancer using pelvic examination, imaging studies, and serum markers. A combination of transvaginal ultrasonography and serum CA-125 antigen level can contribute to early diagnosis of epithelial ovarian cancer [4]; however, CA-125 antigen is not elevated in most primary ovarian mucinous neoplasms [5]. In primary ovarian mucinous tumors, CA-19-9 antigen is used as a marker instead.

CA-19-9 antigen was first reported by Koprowski et al. in 1981 [6]. It can be elevated in a wide range of conditions, both benign and malignant. Steinberg found that markedly high levels of CA-19-9 antigen (greater than 1,000 U/mL) are almost relevant to malignant tumors [3]. Similarly, Cho and Kyung [5] concluded that CA-19-9 was much more elevated in mucinous borderline and malignant tumors than in benign tumors. In contrast, other studies have suggested that levels of CA-19-9 are not correlated with histological subtype (i.e., benign, borderline, and malignant) or tumor stage [2,7]. Elevation of CA-19-9 was also observed in some cases of mature cystic teratoma [8-10].

Tumor markers including CA-19-9 and CA-125 antigen are widely used for prediction of the characteristics of ovarian masses. Abnormal levels of these markers can lead to unnecessary medical intervention and patient anxiety. Therefore, clinical information and antigen testing results should be interpreted carefully.

Conflict of interest

No potential conflict of interest relevant to this article was reported.

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