Hemoperitoneum and acute abdomen caused by the rupture of ovarian granulosa cell tumor: a case report

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Summary

Granulosa cell tumors (GCT) constitute 70% of all ovarian sex-cord stromal tumors, which account for less than five percent of all ovarian carcinoma. The authors herein report a rare case of a ruptured GCT of the ovary in a 43-year-old female who was admitted to the emergency department with signs of acute abdomen.

Key words: Granulosa cell tumor; Acute abdomen; Hemoperitoneum; Rupture of ovarian tumor.

Introduction

Granulosa cell tumors (GCT) constitute 70% of all ovarian sex-cord stromal tumors, which account for less than five percent of all ovarian carcinomas [1, 2]. Microscopically GCTs are composed of granulosa cells and fibroblasts or theca cells [3]. GCTs may secrete estrogen, inhibin, and Müllerian-inhibiting substance (MIS) [4]. The hormonal activity of these tumors is the cause of clinical manifestations of the disease. Most patients present non-specific symptoms such as abdominal pain, distension, and bloating due to the tumor [4]. Isosexual precocious pseudopuberty may be seen in prepubertal girls. Patients in the reproductive age may complain of abnormal uterine bleeding, including menorrhagia and intermenstrual bleeding. In postmenopausal women, the only symptom of this tumor may be vaginal bleeding [4]. Acute abdomen and hemoperitoneum are usually the initial presentations of GCTs, while bleeding is rare [1, 2]. The authors herein report a rare case of a ruptured GCT of the ovary in a 43-year-old female who was admitted to the emergency department with signs of acute abdomen.

Case Report

A 43-year-old woman was admitted to the emergency department of Istanbul University School of Medicine with complaints of abdominal pain, fatigue, and dizziness. Her medical story revealed the diagnosis of an ovarian cyst. Her family history was normal and reported no previous surgery. General examination revealed hemodynamic instability, her pulse was 133 bpm, and her blood pressure was 100/60 mm Hg. A beta-human chorionic gonadotropin (β-hCG) biochemical pregnancy test was negative. Her gynecologic examination was within normal limits. Her abdominal examination showed generalized abdominal tenderness with rebounding pain and muscle guarding. Transabdominal and transvaginal ultrasounds revealed presence of hemoperitoneum and fluid in the abdominal cavity. A laparotomy was indicated.

The abdomen was opened under general endotracheal anesthesia, revealing 3,000-4,000 ml of hemoperitoneum, a ruptured left ovarian tumor, and bleeding from the infundibulopelvic ligament on the patient's left side. Based on the intraoperative findings, a left-sided oophorectomy was performed. The frozen section confirmed a GCT. The surgical procedure consisted of a total abdominal hysterectomy, bilateral salpingo-oophorectomy, and omentum biopsy.

The patient received five units of red blood cells and three units of plasma preoperatively and two units of red blood cells postoperatively. Her postoperative course was then uneventful.

Discussion

GCTs are very rare, accounting for only five percent of all ovarian malignancies [4]. Known initial presentations of this tumor are hemoperitoneum and acute abdomen. In fact, there are many case reports, which have described acute abdominal pain secondary to rupture of GCT. To the authors' limited knowledge, this is one of the few cases of ruptured GCT of the ovary that presented with an acute abdomen in the literature. Habek *et al*. reported a case of GCT with signs of acute abdomen [2]. As the pain of their patient was predominantly in the iliocecal region, the clinician's initial diagnosis was acute appendicitis. When the abdomen was opened, the surgeons saw hemoperitoneum and the rupture of a right-sided ovarian mass. They performed a right unilateral salpingo-oophorectomy and appendectomy. The pathological diagnosis was GCT. One month postoperatively, re-laparotomy was required, when unilateral salpingo-oophorectomy, hysterectomy, and omentectomy were performed. Poma reported a postmenopausal woman who presented with acute abdomen [5]. The medical history of this obese patient, whose body mass index (BMI) was 41, revealed gallstones and complained of right upper quadrant pain. The authors started IV fluid infusion with the diagnosis of cholelithiasis. At follow up, when the urine output became minimal and the hemoglobin decreased to 8.3 g/dl from l0.2 g/dl, the sur-

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geons performed a laparotomy and saw a ruptured left ovary. The pathological diagnosis of GCT was made after surgery which consisted of left oophorectomy. Her postoperative care was uneventful. Lee *et al*. reported a case of a 44-year-old patient of known GCT who was admitted with acute abdomen ten years after her first operation [1]. The medical story revealed a laparotomy at the age of 34 with the diagnosis of Stage 1A GCT. In order to preserve her fertility, the surgeons performed unilateral salpingo-oophorectomy and complete staging. She delivered a normal baby at the age of 37. Ten years after the initial treatment, she was admitted with acute abdomen and she was hemodynamically unstable. Laparotomy showed hemoperitoneum and rupture of the other ovary. The frozen section reported GCT and abdominal hysterectomy; lymph node sampling and omentectomy were performed. The Stage was 1 C and she received six courses of adjuvant chemotherapy (cisplatin, adriamycin, and cyclophosphamide).

In conclusion, GCT is an unusual ovarian malignancy that may present with signs and symptoms including vaginal bleeding. Tumor rupture causing acute abdomen and hemoperitoneum is a less common but dramatic presentation that may be confused with a ruptured ectopic pregnancy or appendicitis. Surgery is the initial choice of management and is necessary for diagnosis, staging, and removal of the tumor. Therefore, especially when faced with an intense presentation such as acute abdomen, clinicians should keep in mind that the cause may be the rupture of an ovarian GCT, especially if the patient has a previous history of an ovarian cyst or GCT.

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