Ruptured Ovarian Dermoid Cyst Mimicking Peritoneal Carcinomatosis: CT and MRI

Peritoneal Karsinomatozis, Rüptüre Ovaryan Dermoid Kist: BT ve MRG

Özet
Ovaryan dermoid kistin spontan rüptürü ve kist içeriğinin kronik abdominal sızmaları granülomatoz peritonite neden olan çok nadir bir durumdur, peritoneal karsinomatoz ile karışabilir. Burada peritoneal karsinomatoz taklit eden radyolojik bulgularla kronik granülomatoz nedeni olan rüptüre dermoid kist olgusunu sunduk.

Anahtar Kelimeler
Dermoid Cist; Ovarian; Peritoneal Carcinomatosis; Rupture

Abstract
Spontaneous rupture of ovarian dermoid cyst and chronic abdominal spillage of its content is a very uncommon condition, which causes granulomatous peritonitis and can be confused with peritoneal carcinomatosis. Here is presented such a case of ruptured dermoid cyst causing chronic granulomatous peritonitis with radiologic findings mimicking peritoneal carcinomatosis.

Keywords
Dermoid Cyst; Ovarian; Peritoneal Carcinomatosis; Rupture

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Introduction
Ovarian dermoid cysts are common lesions, accounting for up to 10–25% of all ovarian neoplasms[1]. Reported complications include torsion (16%), rupture (1–4%), malignant transformation (1–2%), infection (1%), invasion into adjacent viscera and autoimmune hemolytic anemia (<1%). The spontaneous rupture into adjacent viscera is one of the least common complications [2]. Here is presented a case of ruptured ovarian dermoid cyst with granulomatous peritonitis, with radiologic findings mimicking peritoneal carcinomatosis.

Case Report
A 54-year-old lady was referred to our clinic for further assessment of mild abdominal pain, fatigue and intra-abdominal free fluid. The patient had no operation history. Oral informed consent was obtained from the patient. Abdominal computed tomography (CT) revealed intra-abdominal free fluid and diffuse peritoneal infiltrative lesions (3.5 cm thickness), which is considered as “omental cake” (Figure 1).

No calcification or cystic lesions were found. According to these findings, our first impression as diagnosis was peritoneal carcinomatosis. Laboratory work-up revealed high serum CA125, carcinoembryonic antigen CEA and CA19-9 levels (109 U/mL, 12.1 ng/mL and 23.57 U/mL, respectively). She had leukocytosis (14.20 K/mm3) with a serum CRP level of 107.30 mg/L.

Malignant tumors have a characteristic restricted diffusion on ADC maps in the both lesion and omental areas, therefore, we thought malignancy. Spontaneous rupture is an extremely rare complication of dermoid cyst (also known as mature cystic teratoma). Because, it usually has a thick capsule. The reported causes of rupture are torsion with infarction of the tumor, infection, malignancy and rapid growth of the cyst, direct trauma, or prolonged pressure during pregnancy [7]. At ultrasound, CT and MRI, the integrity of the tumor wall should be carefully evaluated for accurate diagnosis of a ruptured ovarian dermoid cyst [8].

Similar to these findings, the integrity of the tumor wall in our case was disrupted. There has been two possible clinic presentations for ruptured dermoid cysts reported in the literature. First presentation is spillage of tumor contents into the abdominal cavity due to rupture, it can lead severe acute chemical peritonitis. Second, chronic granulomatous peritonitis due to chronic cyst content leak is characterized by multiple small white peritoneal lesions, dense adhesions, and ascites mimicking carcinomatosis or tuberculous peritonitis [9].

Discussion
The typical radiologic finding of dermoid cyst is intratumoral fat. The most common ultrasound finding is a cystic mass with an echogenic tubercule due to hair, teeth, and fat [3]. At CT, intratumoral fat shows negative attenuation [4]. At MRI, intratumoral fat shows hyperintense on T1-weighted images, and drop on fat-saturated T1-weighted images. In addition to intratumoral fat, calcification is also commonly seen in ovarian dermoid cysts, but it does not always indicate ovarian dermoid cyst. Therefore, the presence of intratumoral fat is important in the diagnosis of ovarian dermoid cysts [3,5].

The ovarian dermoid cysts have keratinoid content, therefore, they have been shown to exhibit lower ADC values than any other benign or malignant adnexal lesion, a characteristic that may help diagnose lesions with a paucity of fat [6]. We detected restricted diffusion on ADC maps in the both lesion and omental areas, therefore, we thought malignancy.

Figure 1. Precontrast and postcontrast axial computed tomography images show intraperitoneal free fluid and ‘omental cake’ appearance.

Figure 2. Axial T1 and T2 weighted images demonstrate amorphous, thin-walled, cyst-like right adnexal lesion. In addition, there are fat-fluid levels and foamy appearance.

Figure 3. On diffusion weighted magnetic resonance images and apparent diffusion coefficient maps, there is the restricted diffusion as a pitfall.
ers, ascites, “omenta cake” appearance were suggestive of a malignant tumor.

As a very rare entity, chronic granulomatous peritonitis due to ruptured ovarian dermoid cyst can be easily confused with peritoneal carcinomatosis. Mild chronic abdominal pain, a very thin cyst wall remnant, fat-fluid levels, and foamy fat signals on MRI are important clues for dermoid cyst rupture and chronic spillage. Hence, MRI is highly important to make the differential diagnosis.

**Competing interests**
The authors declare that they have no competing interests.

**References**

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