

Imaging findings of a large bilateral ovarian teratoma: A case report

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Abstract

Dermoid cyst, or mature teratoma is the most common germ cell tumors of the ovary, originate from the pluripotent germ cell. It may occur at any age with a peak of incidence in the first two decades of live. The majority of patients with dermoid cyst are asymptomatic but abdominal pain or other nonspecific symptoms may occur. Ultrasound is the initial imaging investigation of choice but computed tomography or magnetic resonance imaging can be aided in difficult cases. Here we present a case with large bilateral dermoid cyst presenting in emergency room with abdominal colic and menstrual irregularity.

The aim of this case report is to categorize the imaging findings and the role of ultrasonography, CT and MRI in evaluation of dermoid cyst.

Keywords: *computer tomography, mature cystic teratoma, ovarian dermoid cyst.*

Introduction

Dermoid cyst is a benign type of ovarian tumor usually occurs during the reproductive period and represents 5% to 25% of all ovarian neoplasms (1,2). In most cases dermoid cysts are unilateral, but in 10-15% of the situations they can be bilateral (2). The majority of patients with dermoid cysts are asymptomatic and they are more likely to be discovered during a routine pelvic examination. However, acute abdominal pain due to rupture or torsion, infection, malignant degeneration may happen. Malignant transformation is rare, occurring in approximately 2-3% of cases (3).

Dermoid cysts are derived from at least two of the three primordial germ cells layers of the ovary (ectoderm, mesoderm and endoderm) demonstrating in this case a broad spectrum of findings, ranging from purely cystic to a mixed mass with all components of the three germ cell layers; calcifications, bone, hair, and fibrous tissue. Ultrasound is often the first imaging modality to detect this abnormality. Computed tomography or magnetic resonance can be aided when US findings are non diagnostic or equivocal and surgical planning information are required.

Case report

A 43-year-old woman presented in emergency room with abdominal colic and irregularity of her menstrual cycle. The abdominal ultrasound demonstrated bilateral heterogeneous masses in the lower abdomen and in the pelvis. CT scan with and without contrast was recommended. Compression and shift in posterior position of the normal uterus was finding. Routine laboratory data taken at admission were normal. A non contrast and contrast-enhanced CT scans of the abdomen performed, show bilateral well-defined adnexal mass of heterogenous structure with a mixture of fat, calcification, soft tissue and cystic component. There was no regional and retroperitoneal lymphadenopathy and no other abnormal findings in this examination. The uterus and both fallopian tubes

were normal. Laboratory tumor marker level Ca 19-9, serum B-hcg, alfa-fetoproteina; Ca 125, cea where within normal range. The imaging features are consistent with dermoid. Extirpation of both masses was performing. Histopathologic evaluation revealed ovarian dermoid cyst.

Discussion

Dermoid cyst is the most common benign tumor of ovary derivatives of the 3 germ layers, ectoderm, mesoderm, and endoderm (4). Dermoid cyst in approximately 80% of the cases in young patients occur between 20 and 30 years of age (5).

In the majority of cases they are unilocular but in 10-15% of mature cystic teratomas are bilateral (2). It is a benign lesion however malignant transformation can be between 2-3%. Usually the patient with dermoid cyst is asymptomatic but abdominal pain or other nonspecific symptoms may occur. In our case, the woman referred abdominal colic and irregularity of her menstrual cycle.

The radiologic diagnosis of dermoid cyst can be made by sonography, CT, or magnetic resonance. Ultrasound is the first imaging investigation of choice recommended in patient with dermoid cyst. Ultrasound appearances of ovarian dermoids depend upon their overall composition. For these reason its ultrasound appearances may different but three manifestations occur most commonly (6). The first is a cystic lesion with a hyperechoic mural nodule-Rokitansky nodule. The second is a diffusely or partially echogenic mass with acoustic shadowing from the hyperechoic part of the dermoid cyst -the iceberg sign. The third manifestation is multiple thin, echogenic bands caused by hair in the cyst cavity: the dot dash pattern.

The CT characteristics of dermoid cyst are an ovarian soft-tissue mass of a predominantly fatty mass (areas with very low Hounsfield values) with the dense element (mixture of fat, hair, debris, and fluid) and globular foci of calcification (7). The presence of these CT scan feature is diagnostic of ovarian cystic teratomas in 98% of cases.

MR evaluation for its better multiplanar imaging and soft tissue contrast can be aided in difficult cases for its sensitivity for fat components with fat suppression techniques. Mature cystic teratomas on T1- and T2-weighted images are seen with high signal intensities the same as subcutaneous fat. Suppression of the signal on the T1-weighted image with fat suppression confirms the fatty content and is diagnostic of a dermoid cyst (8). This T1-weighted fat suppression technique helps in the differential diagnosis of dermoid cyst from

hemorrhagic ovarian lesion such as endometrial cyst.

Our patient on the ultrasound examination demonstrated bilateral adnexal heterogeneous masses (the iceberg sign). While the CT-scan examination show a bilateral well-defined adnexal mass of heterogenous structure with a mixture of fat, calcification, soft tissue and cystic component. The presence of fatty component with mixture, calcification, nodular component and cystic component confirm the diagnosis of dermoid cyst.

Figure 1. Two large lesions seen with extend in pelvis and inferior abdomen with areas of calcification (arrow) soft tissue (double arrow) and fluid components (arrowhead) and fat tissue (asterix) [Features are consistent with dermoid]

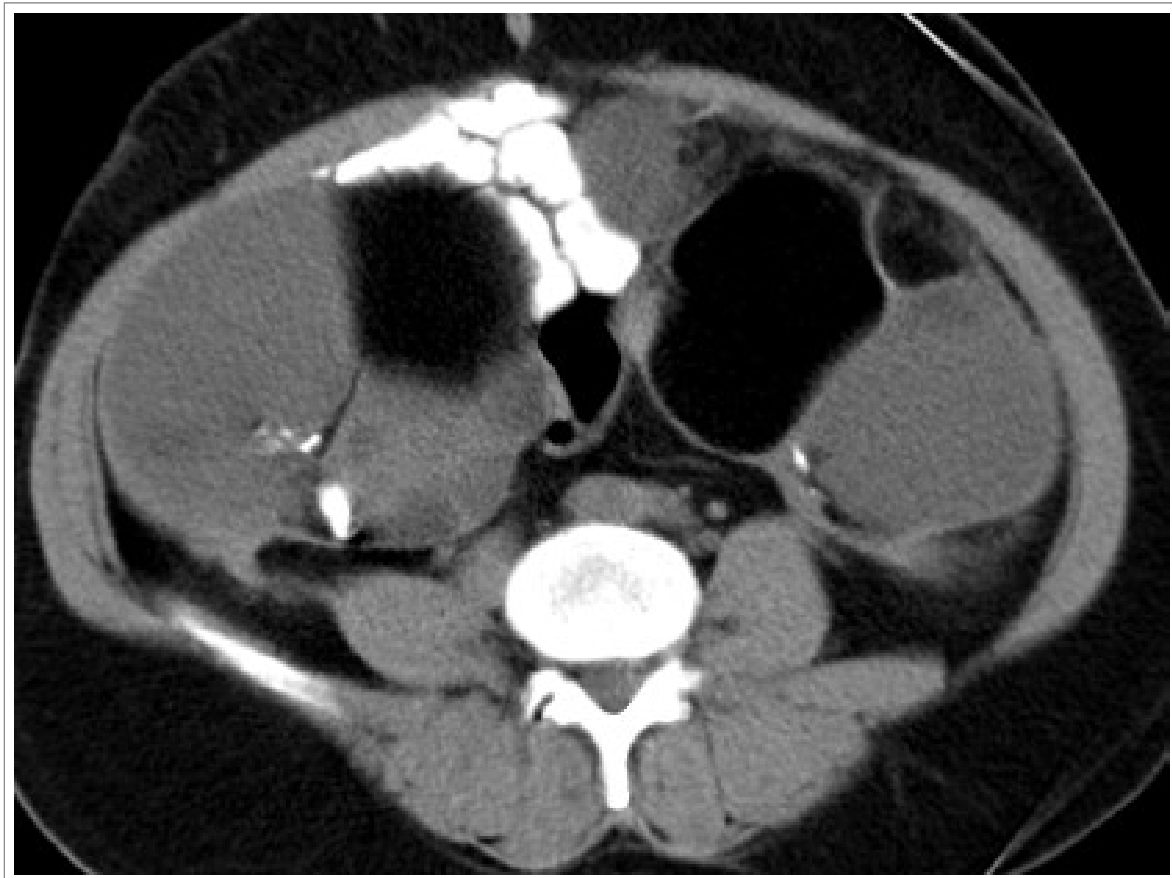
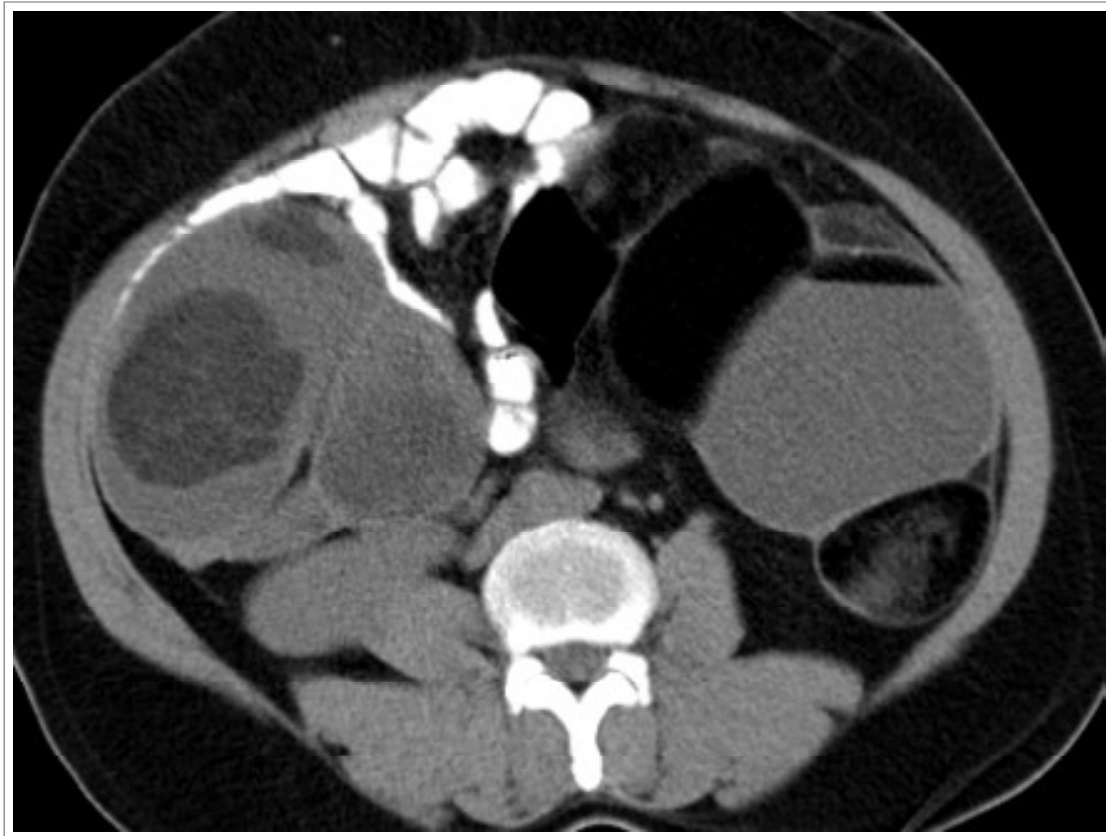


Figure 2. Two large lesions seen with extend in pelvis and inferior abdomen with areas soft tissue (double arrow) and fluid components (arrowhead) and fat tissue (asterix) [Features are consistent with dermoid]



Conclusion

Ultrasound, MRI, and CT plays an important role in the diagnosis of a dermoid cyst. Understanding the imaging manifestations of mature teratomas

permits a more specific and accurate diagnosis narrowing in these ways substantially the differential diagnosis and avoiding an invasive biopsy and inappropriate management (9).

Conflicts of interest: None declared.

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