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Case Report

Late onset of ovarian dysgerminoma demonstrated by F-18 FDG PET/CT

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Abstract

Ovarian dysgerminomas are rare ovarian tumors that occurs predominantly in young women in the second and third decades of life. They arise from the undifferentiated primordial germ cells. A 43-year-old woman with a three-month-history of left lower quadrant abdominal pain with palpable mass that was detected by contrast-enhanced computed tomography (CT), Magnetic Resonance imaging (MRI) and fluorine-18-fluorodeoxyglucose positron (18F-FDG PET/CT).

Key Words:

Dysgerminoma, ovary, FDG, PET/CT

Introduction

Ovarian dysgerminomas are rare ovarian tumors that occurs predominantly in young women in the second and third decades of life. They arise from the undifferentiated primordial germ cells. Ovarian dysgerminoma should be differentiated from non-ovarian malignant tumors, epithelial malignancy. A 43-year-old woman with a three-month-history of left lower quadrant abdominal pain with palpable mass that was detected by contrast-enhanced computed tomography (CT), magnetic resonance imaging (MRI) and fluorine-18-fluorodeoxyglucose positron (18F-FDG PET/CT).

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Case Presentation

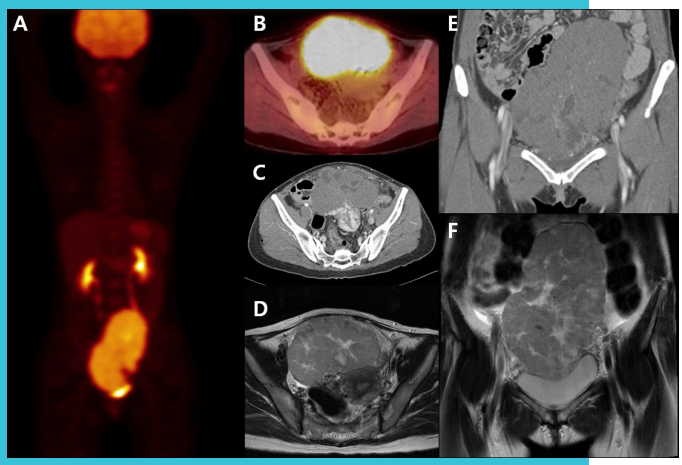
A 43-year-old woman with a three-month-history of left lower quadrant abdominal pain with palpable mass that was detected by contrast-enhanced computed tomography (CT), Magnetic Resonance imaging (MRI) and fluorine-18-fluorodeoxyglucose positron (18F-FDG PET/CT). 18F-FDG PET/CT demonstrated an area of huge heterogenous increased 18F-FDG uptake corresponding to a lobulating contoured mainly solid mass within fibrovascular septa and multifocal cystic lesion arising from the right ovary, suspicious for germ-cell tumor, such as dysgerminoma or epithelia ovarian malignancy (Figure 1). No other areas of abnormal 18F-FDG uptake were detected in the rest of the body. The laboratory findings show an increased serum level of β-human chorionic gonadotropin (hCG) (132.76 mIU/ml, normal range 0-5) and CA125 (47.4 U/ml, normal range 0-35). A total abdominal hysterectomy (TAH) with bilateral salphingo-oophorectomy (BSO) and pelvic lymph node dissection were performed. Histology

demonstrated the presence of an ovarian dysgerminoma with positive findings of immunohistochemistry (positive of CD17 and negative of CK, vimentin, CD30, AFP, EMA, NSE) and the patient was addressed to chemotherapy.

Discussion

Ovarian dysgerminoma are rare ovarian tumors that occurs predominantly in young women in the second and third decades of life. They arise from the undifferentiated primordial germ cells [1]. Ovary dysgerminoma should be differentiated from non-ovarian malignant tumors, epithelial malignancy and other germ cell tumors in ovary. Epithelial cystadenocarcinoma, the most common tumor of ovary, often appearances as a cystic-solid mass without envelope [2]. Elevated levels of β-hCG can help confirm the diagnosis in about 5% of dysgerminoma. Characteristic imaging findings include multilobulated solid masses with prominent fibrovascular septa. The anechoic, low signal-intensity, or low-attenuation area of the tumor represents necrosis and hemorrhage [3]. A few cases of ovarian dysgerminoma using 18F-FDG PET/CT have been reported in the literature [4]. This case shows a more huge, older age, high SUVmax and β-hCG level in comparison with above-mentioned report. A 18F-FDG PET/CT was useful in evaluating a malignant potential of the ovary in an older woman with lower quadrant abdominal pain or palpable mass and detection of distant metastasis for operability. Although rare, dysgerminoma should be considered one of the differential diagnosis of ovarian lesions detected by 18F-FDG PET/CT.

Figure 1.



A 18F-FDG PET/CT scan (Biograph 2, Siemens, Germany) was performed after the injection of 344 MBq (9.3 mCi) of 18F-FDG with a blood glucose level of 94 mg/dl for left lower quadrant abdominal pain with palpable mass. The MIP and fusion axial (a, b) showing a huge heterogenous increased FDG uptake of the mass arising from the right ovary with a maximum standardized uptake value (SUVmax) of 14.3, which suggest a malignancy of ovary. Axial and coronal contrast enhanced abdominopelvic CT (c, e) and axial and coronal T2-weighted pelvic dynamic MRI (d, f) images show a T2 intermediate to high SI lobulating contoured mainly solid mass within fibrovascular septa and multifocal cystic lesion arising from the right ovary.

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Conflict of Interest Statement
Jae Pil Hwang declare that "I have no conflict of interest".

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