New advances in MRI in imaging of ovarian tumors

Abstract

Ovarian cancer is the second most common gynecologic malignancy and is the fifth leading cause of cancer death in women. Nearly 75% of women with ovarian cancer present with advanced stage disease, which is associated with a poor prognosis. There has been a relative standstill in the progress of treating ovarian cancer that has been attributed to the late stage of disease presentation. [3] Ovarian neoplasms can be classified based on cells of their origin into epithelial, germ cell, sex cord stromal, or metastatic types. Epithelial tumors account for nearly 85% to 90% of all ovarian malignancies. [4] Histologic subtypes in epithelial ovarian cancer include serous, mucinous, endometrioid, clear cell, and undifferentiated tumors. In advanced stage disease, they are all associated with a similarly poor prognosis.

The goal of imaging in ovarian cancer detection is to expeditiously distinguish benign adnexal lesions from those requiring further pathologic evaluation for malignancy. For lesions indeterminate on ultrasound, MRI increases the specificity of imaging evaluation, thus decreasing benign resections. CT is useful in diagnosis and treatment planning of advanced cancer. Although ^{18}F-FDG-avid ovarian lesions in postmenopausal women are considered suspicious for malignancy, PET/CT is not recommended for primary cancer detection because of high false-positive rates.