磁共振成像

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卵巢纤维-卵泡膜细胞肿瘤和成人型颗粒细胞瘤是最常见的两种卵巢性索间质细胞瘤，前者为良性肿瘤，手术切除后预后良好，后者则为低度恶性肿瘤，可发生转移和复发，治疗原则同上皮性卵巢癌，常需行肿瘤细胞减灭术辅助化疗。但是这两种肿瘤的临床表现类似，均可伴雌激素水平升高，容易被混淆，术中冰冻病理也存在一定误诊率。因此，术前对两种肿瘤精准的影像学诊断和鉴别非常重要，有助于选择更合适的治疗方法。

既往研究显示成人型颗粒细胞瘤的特征性MRI表现之一为DWI高信号，通常这也是提示卵巢恶性肿瘤的征象之一，但是纤维-卵泡膜细胞肿瘤部分病例因含卵泡膜细胞比例较高也可表现为DWI高信号，这就为两者的鉴别诊断带来了困难。而且两种肿瘤还存在其他重叠的影像学表现，都使得它们在术前非常容易被误诊。

近年来，影像组学技术快速发展，在肿瘤诊断中显示出了极大的潜力，它可以从医学图像内部提取大量人眼无法识别的定量特征，从而无创地反映病变内部异质性及生物学信息。

本研究应用单因素分析和多因素logistic回归对卵巢纤维-卵泡膜细胞肿瘤和成人型颗粒细胞瘤患者的临床和常规MRI征象进行筛选，建立临床模型。其次，基于T2WI提取影像组学特征，应用K最佳和最小绝对收缩和选择算法进行特征筛选，构建影像组学模型并计算影像组学评分。最后，联合临床模型和影像组学评分构建列线图模型。应用受试者工作特征曲线和决策曲线评估各模型的性能。结果显示基于MRI的影像组学模型和列线图模型均展现了良好的效能，为术前准确区分两种肿瘤提供了有效的方法，对患者的临床决策有积极的意义。详见内文第152页。

书　讯

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About the cover

Ovarian fibroma-thecoma and ovarian adult-type granulosa cell tumor are the two most common types of ovarian sex cord-stromal tumors. The former is a benign tumor, which has good prognosis after resection, while the latter is a low-grade malignant tumor and can metastasize or recur. The treatment principle of ovarian adult-type granulosa cell tumor is the same as that of epithelial ovarian cancer, and cytoreductive surgery and adjuvant chemotherapy are often required. However, the clinical manifestations of these two tumors are similar, which are related to excessive estrogen production, and the misdiagnosis may be occur in intraoperative frozen section examination. Therefore, preoperative accurate differentiation of the two tumors is very important in order to select appropriate treatment.

Previous studies have shown that one of the MR characteristics of adult granulosa cell tumor is high-signal intensity on DWI, which is usually one of the features indicating ovarian malignancy. However, some fibroma-thecomas may also manifest high-signal intensity on DWI because of the high proportion of theca cells, which makes the differential diagnoses more difficult. In addition, the two tumors have other overlapping imaging features and therefore can be easily misdiagnosed before surgery.

In recent years, the rapid development of radiomics has shown great application potential in the diagnosis of tumor. This technique can extract abundant quantitative features that cannot be recognized by human eyes from medical imaging, and the heterogeneity and biological information of lesions can be carried out non-invasively.

This study selected clinical and routine MRI features of ovarian fibroma-thecoma and ovarian adult-type granulosa cell tumor by univariate analysis and multivariate logistic regression, and the clinical model was constructed. Secondly, radiomics features were extracted from T2WI. Select K best and least absolute shrinkage and selection operator algorithm were used to reduce the dimension and then the radiomics model was constructed by selected features, and a Radiomics score (Rad-Score) was calculated. Furthermore, the nomogram model was constructed by combining with clinical model and Rad-score. Finally, the receiver operator characteristic curves and decision curve analysis were used to evaluate the performance of all these models. The results showed that the MRI-based radiomics model and nomogram model showed good diagnostic efficiency, and could accurately identify the two tumors before surgery, which had positive significance for clinical decision-making. Please see text page 152.