Automated 3D Segmentation System for Detecting Tumor and Its Heterogeneity in Patients with High Grade Ovarian Epithelial Cancer

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Abstract : High grade ovarian epithelial cancer (OEC) is fatal gynecological cancer and the poor prognosis of this entity is closely related to considerable intratumoral genetic heterogeneity. By examining imaging data, it is possible to assess the heterogeneity of tumorous tissue. This study proposes a methodology for aligning, segmenting and finally visualizing information from various magnetic resonance imaging series in order to construct 3D models of heterogeneity maps from the same tumor in OEC patients. The proposed system may be used as an adjunct digital tool by health professionals for personalized medicine, as it allows for an easy visual assessment of the heterogeneity of the examined tumor.

Keywords : image segmentation, ovarian epithelial cancer, quantitative characteristics, image registration, tumor visualization

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