Author's response to reviews

Title: Automatic Segmentation of Meningioma from Non-Contrasted Brain MRI Integrating Fuzzy Clustering and Region Growing

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Dear Editor of the *BMC Medical Informatics and Decision Making*:

Enclosed is our manuscript of “**Automatic Segmentation of Meningioma from Non-Contrasted Brain MRI Integrating Fuzzy Clustering and Region Growing**”.

In this study, we try to develop a method which integrating the fuzzy-c-mean (FCM) algorithm with the region growing technique to extract the tumor portion from the MR image of the menigioma patient. Compare to other studies also using the FCM clustering, the added region growing technique could effectively eliminate the fragment portion within the post-clustering image, and avoid further error in the subsequent procedure.

Different from other brain tumor, menigioma is the few benign tumors found in this area, so the precise tumor margin detection is curtail for complete surgical resection. Also the higher possibility for the tumor to situate in the midline of the brain poses a challenge for tumor location. Compare to other related works, here we use only T1 and T2-weighted, non-contrasted images for study. By refining the research process, we overcome the difficulty encountered by other studies, and could detect the midline tumor effectively.

Through objective quantified evaluation, the results suggest that there is highly match between our system and the ground truth, and the correspondence rate is also satisfactory. We this system could play an important role in clinical MR images analysis, and has a great potential for further development.

We submit this manuscript to promote this technique and report our experience. Please accept it as a candidate for publication in the *BMC Medical Informatics and Decision Making*.

The manuscript has not been previously published in whole or in part or submitted elsewhere for review.

Sincerely,

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