Dokumenttyp: journal article

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Titel des Beitrags: Rapid assessment of liver volumetry by a novel automated segmentation algorithm.

Abstract: This study aimed to evaluate a novel segmentation software for automated liver volumetry and segmentation regarding segmentation speed and interobserver variability. Computed tomographic scans of 20 patients without underlying liver disease and 10 patients with liver metastasis from colorectal cancer were analyzed by a novel segmentation software. Liver segmentation was performed after manual placement of specific landmarks into 9 segments according to the Couinaud model as well as into 4 segments, the latter being important for surgery planning. Time for segmentation was measured and the obtained segmental and total liver volumes between the different readers were compared calculating intraclass correlations (ICCs). Volumes of liver tumor burden were evaluated similarly. Liver segmentation could be performed rapidly 3 minutes or less. Comparison of total liver volumes revealed a perfect ICC of greater than 0.997. Segmental liver volumes within the 9-part segmentation provided fair to moderate correlation for the left lobe and good to excellent correlations for the right lobe. When applying a 4-part segmentation relevant to clinical practice, strong to perfect agreement was observed. Similarly, tumor volumes showed perfect ICC (>0.998). Rapid determination of total and segmental liver volumes can be obtained using a novel segmentation software suitable for daily clinical
practice.

Zeitschriftentitel / Abkürzung: J Comput Assist Tomogr

Jahr: 2013

Band: 37

Heft / Issue: 4

Seiten: 577-82

Sprache: eng


Print-ISSN: 0363-8715

TUM Einrichtung: Medizinische Statistik und Epidemiologie

Occurences:

· Einrichtungen > Fakultäten > Fakultät für Medizin > Kliniken und Institute > Institut für Medizinische Statistik und Epidemiologie > 2013

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