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THE EFFICACY OF 320-DETECTOR ROW COMPUTED TOMOGRAPHY FOR ASSESSMENT OF PREOPERATIVE PULMONARY VASCULATURE OF CANDIDATES FOR PULMONARY SEGMENTECTOMY
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Objectives: The purpose of this study was to compare the efficacy of 320-detector row computed tomography (CT) with that of 64-detector row CT for 3-dimensional assessment of pulmonary vasculature of candidates for pulmonary segmentectomy.

Methods: Both CT procedures were used for 32 patients, who subsequently underwent pulmonary segmentectomy. Before the operation, 3-dimensional pulmonary vasculature images were obtained for each data and the arteries and intersegmental veins of the affected segments were identified. Two thoracic surgeons independently assessed the vessels with visual scoring systems, and kappa analysis was used to determine interobserver agreement. The Mann-Whitney U-test was used to compare the visual scores for assessment of the visualization capability of the two methods, and ROC analysis was performed to compare their efficacy pulmonary vasculature assessment. Sensitivity, specificity, and accuracy of either method were also compared by means of McNemar’s test.

Results: Visualization scores for the pulmonary vessels were significantly higher for the 320- than for 64-detector CT (P = 0.001 for the affected arteries, and 0.009 for the intersegmental veins). As for pulmonary vasculature assessment, the areas under the curve showed no statistically significant differences in between the two methods. The specificity and accuracy of intersegmental vein assessment were significantly better for the 320- than the 64-detector row CT (P < 0.05). Inter-observer agreement for the assessment yielded by either method was almost perfect for all cases.

Conclusions: 320-detector row CT is more useful than conventional 64-detector row CT for preoperative 3-dimensional assessment of pulmonary vasculature in candidates for pulmonary segmentectomy.

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