PURPOSE: To investigate the value of different postprocessing algorithms for multislice spiral CT in diagnosing acute pulmonary embolism. MATERIALS AND METHODS: Forty-eight patients with suspected pulmonary embolism prospectively underwent MSCT using an 8-slice spiral CT. Using a confidence level on a three-point scale, three radiologists reviewed 2-mm and 5-mm axial slices, 5-mm and 10-mm axial maximum intensity projections (MIP) and 2-mm coronal slices as well as interactively generated multiplanar reformatted images. A subsequent consensus reading of the primary 1.25-mm axial slices served as gold standard. ROC analysis was applied to the various vascular sections. RESULTS: The ROC analysis revealed a higher diagnostic accuracy of the 2-mm axial sections as compared to the 5-mm axial slices (Az = [0.988; 0.976] vs. Az = [0.988; 0.802]). Coronal and multiplanar reformations also showed excellent diagnostic accuracy (Az = [0.972; 0.949] and Az = [0.997; 0.951], respectively) and were significantly superior to the 5-mm axial slices through the segmental and subsegmental arteries (p=0.05). MIP showed the weakest diagnostic accuracy (Az = [0.967; 0.802] for 5-mm MIP; Az = [0.879; 0.781] for 10-mm MIP). CONCLUSION: Thin axial slices as well as coronal and multiplanar reformations are superior to thick axial slices in the diagnosis of
acute pulmonary embolism. MIP is not suited for accurate diagnosis of pulmonary embolic disease.