Comparative Study on Pulmonary Artery of Complex Congenital Heart Disease by Dual-source CT and Ultrasound

Ou Shan-xing*, Zhang Li and Qian Min

Guangzhou, Guangdong, China

Objective To compare dual-source CT (DSCT) and ultrasound cardiography on the assessment of pulmonary artery in patients with complex congenital heart disease(CCHD). Materitals and methods 49 patients with abnormal pulmonary arteries verified by surgery were collected, including 27 males, 22 females, arranged from 16 days to 29 years old (average 12.5 years). DSCT and echocardiography was performed respectively before operation in patients with CCHD. 7 items of DSCT and echocardiography were concerned, including pulmonary artery trunk, left and right pulmonary arteries, the confluence of pulmonary, stenosis of pulmonary valve, patent ductus arteriosus, and major aortopulmonary collateral arteries in comparison of DSCT findings and echocardiographys. Results The pulmonary arteries could be clearly observed on original images and multi-planar reconstruction images from different angles view. In comparison with echocardiography, DSCT is superior to assess pulmonary artery (Statistic parameters of DSCT: sensitivity 93%, specificity 97%, PPV 99%, NPV 83%.Statistic parameters of echocardiography.sensitivity 79%, specificity 80%, PPV 92%, NPV 57%). There has a good correlation between the results of DSCT and echocardiography (coefficient of correlation: main pulmonary artery 0.96, left pulmonary artery 0.97, right pulmonary artery 0.92). Conclusion DSCT can clearly show the abnomality of pulmonary artery, it is superior to echocardiography the pulmonary artery in CCHD.