Prospectively ECG-triggered 256-slice computed tomography findings in a patient with dextrocardia, stent-treated coarctation, and infracardiac right-sided pulmonary vein deviation

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A 13-year-old female patient with Turner syndrome and complex congenital heart disease including aortic coarctation presented to our hospital. Stenting of the coarctation was successfully performed with an open-cell-design non-covered stent (ev3 MaxLD). Due to the short distance between the left subclavian artery origin and the coarctation, partial overstenting of the subclavian artery was accepted. Post-stenting angiography demonstrated good patency of the subclavian artery, no dissections, and no residual pressure drop over the stent. Because Turner syndrome patients have a higher risk for aortic aneurysm, she underwent contrast-enhanced cardiac CT scan to check stent patency and positioning 6 weeks after stenting. Scanning was performed on a 256-slice scanner (Philips, the Netherlands) using prospective ECG-triggering timed at diastole using 80 KV and 195 mAs. Heart rate during scanning was 90 b.p.m. Radiation dose to the patient was only 1.3 mSv. The CT scan confirmed the adequate position of the stent without aneurysm formation and good left subclavian artery contrast filling distal to the stent (arrowhead Panel A, arrow Panel C). Furthermore, CT demonstrated dextrocardia, bicuspid aortic valve (Panel D), and abnormal pulmonary venous return of the right lung to the inferior caval vein (arrows Panels A and B) with an enlarged right ventricular cavity (RV, Panel E). No right pulmonary artery hypoplasia or sequester was seen. The left pulmonary veins drained regular into the left atrium (LA, Panel A). Current high-end CT scanners can provide ECG-triggered imaging of complex congenital heart disease at a low radiation dose to the patient.

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