Objective: Pulmonary artery coarctation (PACoA) is a major problem that increases the frequency of intervention. However, there is little evidence regarding the prediction of PACoA development.

Methods: A retrospective chart review was performed on 42 patients who underwent modified Blalock–Taussig shunt and preoperative contrast-enhanced computed tomography (CECT). An uneven PA branching was defined as an abnormal ductus arteriosus connection to the left PA distal to the PA branching on CECT.

Results: Nineteen (45.2%) of 42 patients were diagnosed with PACoA. The median diameters of the ductus on the aorta and PA sides were 4.1 mm and 3.6 mm in the PACoA group and 3.6 mm and 2.9 mm in the non-PACoA group, respectively (P=0.18, 0.51). Tortuous ductus was recognized in 7 (36.8%) patients in the PACoA group and 14 (60.8%) patients in the non-PACoA group [P=0.12]. PACoA was associated with pulmonary atresia (16 patients [84.2%] in the PACoA group and 12 patients [52.1%] in the non-PACoA group) [P=0.02]. All 19 (100%) patients had uneven PA branching in the PACoA group, whereas 5 of 23 (21.7%) patients had uneven PA branching in the non-PACoA group [P<0.001].

Conclusions: Uneven PA branching rather than the ductus arteriosus size was strongly associated with PACoA development; therefore, morphologic assessment by CECT

should be considered in patients with pulmonary atresia.