

Characterization of conotruncal heart defects using four-dimensional Doppler silhouette mode sonography: a report of three cases.

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Objectives

To evaluate the utility of four-dimensional Doppler in the characterization and subclassification of fetal conotruncal heart defects.

Results

The following anomalies were identified:

1. Tetralogy of Fallot with Pulmonary Stenosis:

Large perimembranous septal defect, aortic overriding, infundibular pulmonary stenosis, and hypoplastic pulmonary artery.

2. Type 3 Common Truncus Arteriosus (Collet and Edwards):

CAT with two laterally emerging pulmonary branches showing symmetry in morphology (Moose horn sign).

3. Type A4 Common Truncus Arteriosus (Van Praagh):

CAT with posterior pulmonary branches and interrupted aortic arch.

Methods

Three cases of conotruncal heart defects detected between 23-30 weeks of gestation were analyzed using ultrasound GE Voluson E8, using the fetal cardiac preset. Findings were confirmed prenatally by another fetal medicine specialist trained in echocardiography and corroborated at tertiary care centers. Cardiovascular structures were evaluated with 4D Doppler silhouette reconstructions.

Conclusion

Four-dimensional Doppler facilitates the subclassification of conotruncal heart defects, providing greater clarity, depth, and understanding, allowing for better correlation with established diagnostic criteria. Its use in pregnancy offers precise anatomical details that can improve perinatal planning and prenatal counseling. Proper interpretation of these images requires specialized training with a learning curve in a tertiary care center and high-resolution equipment.

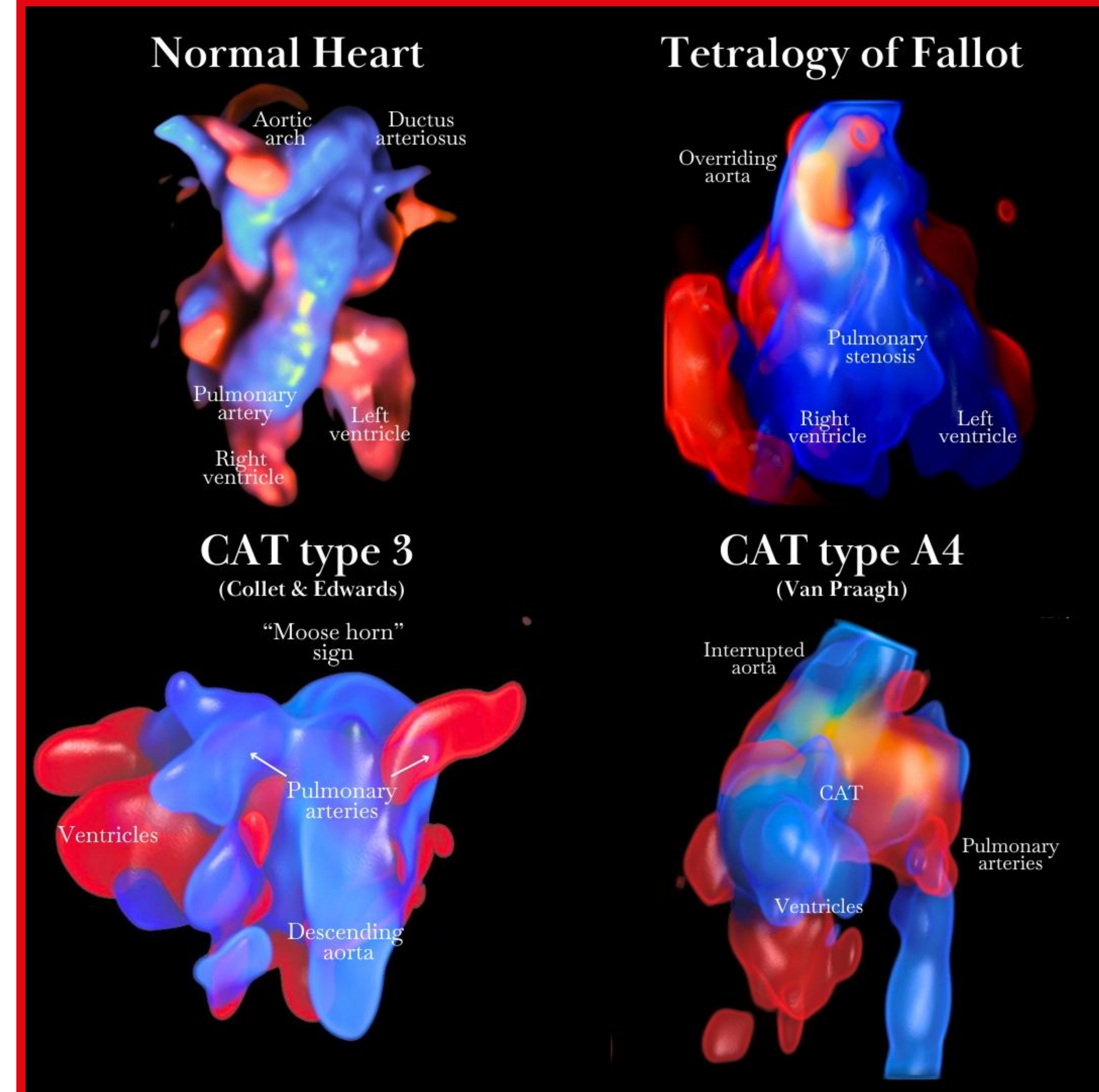


Figure 1. A normal heart (top left image) is compared with other hearts with conotruncal artery abnormalities. The borders of the large vessels are clearly visible in greater detail and without interruptions. CAT: Common truncus arteriosus.