

measuring RVOT components - the sub pulmonary region, pulmonary valve, MPA, and branch PA.²⁰ CTA gained popularity as it is a minimal invasive procedure can give all measurements similar to conventional angiogram. For measurement of pulmonary arteries, a study of 56 MDCT scans showed an excellent correlation between MDCT and conventional angiogram.¹⁴

The current study results proved that, measurements of the pulmonary arteries between TTE and CTA are comparable. By CTA and TTE, for branch pulmonary arteries the mean difference was less than 1mm, thus TTE can be the preliminary investigation. A 13-year review of 598 children with TOF, the surgical outcomes suggested that without the need of additional imaging modalities TTE alone was good enough to identify coronary abnormalities.²¹

In the case of TOF with hypoplastic pulmonary arteries or annulus, CTA should be used as a reserved modality for the accurate assessment of MPA, pulmonary annulus, and branch pulmonary arteries for decision-making regarding the surgical approach in the form of total correction or shunt operation and its outcome. TTE machines develop significant upgrades, starting from M Mode to two & three -dimension imaging.²² Newer generation TTE machines have the facilities of adaptive contrast enhancement (ACE), true confocal image (TCI) technologies, which can easily differentiate between different tissue & acquire high-resolution images.²³

Though CTA is a minimally invasive procedure, well visualized cardiac & extra cardiac structures. But in the perspective of our country CTA is expensive, not easily available modality also need well sedation of children. On the other hand, TTE is easily available, less expensive, no need of sedation, can be easily done pre, per or post operative states. In our country TOF related study are not that much available. We tried to evaluate PA & its branches with annulus with TTE and CTA.

This study has several limitations. As a retrospective, single-center study, the findings may not be fully generalizable to other settings. In addition, surgical or

intraoperative confirmation of imaging findings was not available for comparison, which may limit the ability to validate certain observations. Despite these limitations, the study offers useful insights into the comparative performance of echocardiography and CTA in the evaluation of pulmonary artery morphology in TOF.

CONCLUSION

TTE is the first line of investigation for diagnosis of TOF & its types, as diameter measured in TTE has good correlation and agreement with CTA. However, use of CTA can be reserved for certain complex cases. It can help to reduce radiation exposure of CTA and reduce the treatment cost while ensuring the quality of care. We suggest that, more emphasis should be placed on performing a comprehensive echocardiogram by an experienced pediatric cardiologist with an upgraded ECHO machine.

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