

at the time of surgery were entirely consistent with the information given by all of the various imaging modalities, allowing confidence in the planning process.

Conclusion These cases demonstrate the value of using a variety of imaging modalities for complex DORV cases, ensuring that important details are not missed.

21 DECISION-MAKING USING MULTIMODALITY IMAGING IN COMPLEX MUSCULAR VENTRICULAR SEPTAL DEFECTS POST PULMONARY ARTERY BANDING

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10.1136/heartjnl-2017-311499.21

Large muscular ventricular septal defects below the moderator band are an interesting entity as these lesions can be surgical challenging. The conventional approach is to do pulmonary artery banding to control heart failure and allow child to grow with view to close later using interventional approach if the lesion remains significant. Hybrid approach with pulmonary artery debanding and per-ventricular VSD closure has been attempted in few centres.

Current advances in multimodality imaging helps us to understand the anatomy better and help us to plan the interventional and surgical procedure well.

We present 3 cases of muscular ventricular septal defects post pulmonary artery banding. The VSDs in these patients had multiple exits in right ventricle aspect extending above and below the moderator band. Assessment of ventricular septal defect using transthoracic echocardiography, 3D echocardiography, conventional angiogram and CT angiogram added more information. However along with 3D modelling and printing in these selected cases helped to preempt challenges and plan according to avoid complications. We demonstrate the use of multimodality imaging and 3D modelling in these case series.

22 SINGLE CENTRE EXPERIENCE OF INCORPORATING KNOWLEDGE-BASED RECONSTRUCTION FOR RIGHT VENTRICULAR VOLUMETRY INTO CLINICAL PRACTICE

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10.1136/heartjnl-2017-311499.22

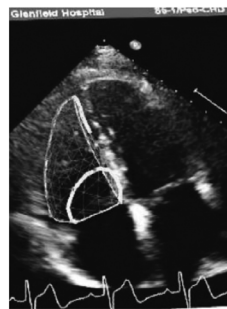
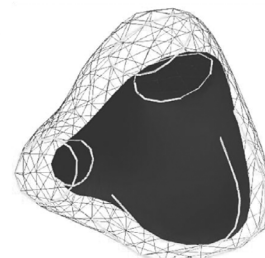
Knowledge-based reconstruction (KBR) is a new technique for calculating the volume of cardiac chambers accurately. The technique can be applied to 3D datasets (eg, MRI scans), but can also be used with conventional 2D echocardiography by tracking the probe position and orientation in 3D space. It is particularly useful for assessing the volume of the right ventricle without having to undergo an MRI scan.

We acquired a KBR system in March 2015, and have been putting it into practice. We have performed 69 studies in 45 patients over an 18 month period, ages between 5 and 70 years average 18.9 years, 28 patients (62%) were between 5–12 years and 37 patients (82%) were below 18 years of age. Indications mainly for post surgical Tetralogy of Fallot variants

A. Dots into RV 3D model

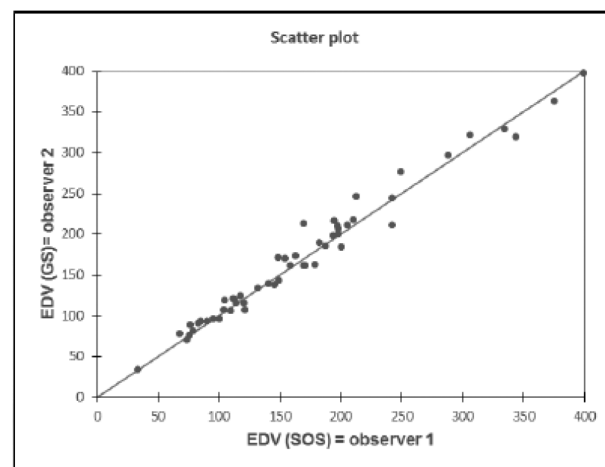


B. Combined RV diastolic and systolic models



C. Superimposed 3D model on 2D image

Abstract 22 Figure 1 A,B,C



Abstract 22 Figure 2 Our institute inter-observational variability

or post pulmonary valve dilation resulting in free pulmonary regurgitation or mixed valve disease with resulting significant right ventricular volume loading. In a subset we have performed analysis on 13 patients who underwent pulmonary valve replacement, giving pre- and post-surgical RV volume and function analysis, all 13 patients had Cardiac MRI pre surgery, that was comparable to the pre-surgical KBR analysis. **Conclusion** Knowledge based reconstruction of right and left ventricle volumetric data can be performed with good reliability and good alternative to MRI.

23 RIGHT VENTRICULAR OUTFLOW TRACT ELAN CONDUIT: THE FIVE YEAR SCOTLAND EXPERIENCE

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10.1136/heartjnl-2017-311499.23