TTE

- challenges: complex shape and retrosternal position
  - not easily modelled geometrically therefore difficult to assess volumes and function
  - numerous surrogate indices of RV function have been described but all have limitations cf gold standard MR techniques
- qualitative > quantitative (eg. EF) description of RV function

TTE

TTE measurement	How to measure	Values
RV size (Fig. 5a)	Two ways to determine: Qualitative comparison of the relative sizes of the RV and LV. (The normal RV should be 2/3 the size of the LV, only if the LV size is NORMAL) Diameter at the base, mid-level and length. If values higher than those given, RV dilatation present	Qualitative: Mild dilation: RV >2/3 LV Moderate dilation: RV=LV Severe dilation: RV larger than LV Diameter: Base >42 mm Mid-level >35 mm Length >83 mm
RV systolic function (Fig. 5b)	Variety of parameters may be used. TAPSE is the most common: 'M-mode' cursor through the tricuspid annulus provides a graphical representation of annular position against time	Displacement of the annulus towards the apex during systole is indicative of systolic function <17 mm=RV systolic dysfunction
RVSP (Fig. 5c)	RVSP=$4v^2$+CVP where v is velocity Max velocity of the TR jet (highlighted in Fig. 5c) is converted to a trans-valvular pressure gradient with Bernoulli's equation ($p=4v^2$)	Normal RVSP: <35 mm Hg
Septal position (Fig. 5d)	Visual assessment of ventricular septal position in parasternal short axis view In Fig. 5d, a parasternal short axis is shown. The LV, RV and interventricular septum are highlighted	As the RV dilates, the ventricular septum will flatten and the LV will lose its characteristic circular shape and become D-shaped in cross-section (see Fig. 3) Flattening in diastole only suggests volume overload Flattening in systole and diastole suggests volume and pressure overload