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CARDIAC

TDI

TISSUE DOPPLER IMAGING

Tissue Doppler Imaging, TDI measures the velocity of myocardial wall motion at specific locations in the heart using the Doppler principle.

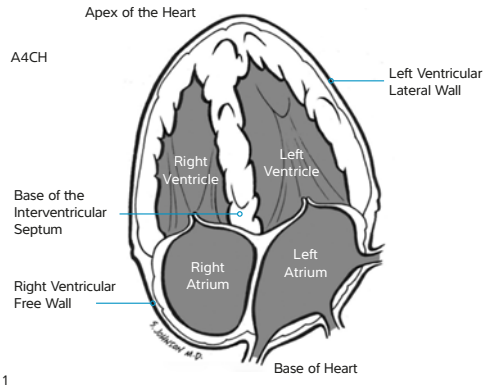

Fig. 1

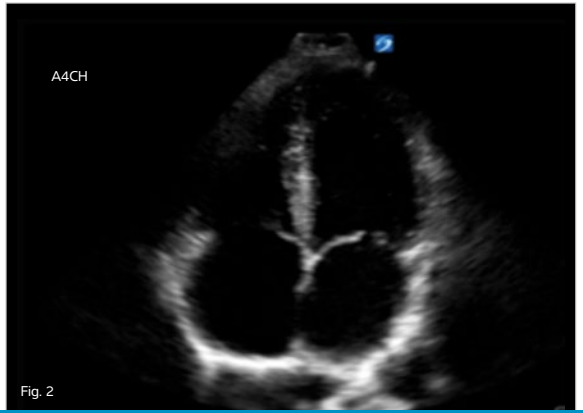

Fig. 2

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TDI

TISSUE DOPPLER IMAGING

TDI is a tool used in the assessment of both systolic and diastolic ventricular functions of the heart. In sampling multiple locations of the heart's wall tissue, global and regional hemodynamic functions and events may be quantified and measured. TDI also aids in diagnosing major cardiac diseases such as; heart failure, coronary artery disease, acute myocardial infarction, and hypertension.

(S') Above baseline – Peak systolic annulus velocities.

(E') Below baseline – Peak diastolic annulus velocities in early ventricular filling.

(A') Below baseline – Peak diastolic annulus velocities seen in late ventricular filling during atrial contraction. Also known as the atrial kick.

Required measurements:
Peak E' Waveform, Peak A' Waveform.

Performing measurement:
Obtain a Apical 4 Chamber view (A4CH) (Fig. 2).

- Place the Pulsed Wave Doppler (PWD) sample volumes on the septal near the annulus, activate PWD, freeze Doppler tracing (Fig. 3).
- Measure the Peak E' and A' Velocities – Save Calc.
- Repeat measurements for the left ventricular lateral wall and the right ventricular free wall in the A4CH views. (Fig. 4 and 5 respectively).
- Measurements may also be done in the A2CH view on the anterior and inferior walls (Not pictured).

* Normal values ranges for S and E' velocities decrease with age while the A' velocities increase with age.

* The ratios between the E and A velocities have also been shown to predict mortality and other cardiovascular events.

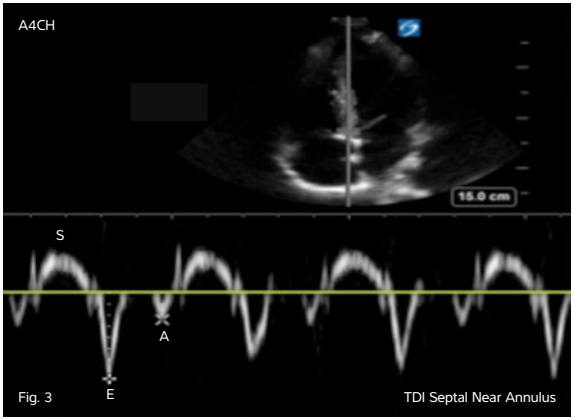

Fig. 3 TDI Septal Near Annulus

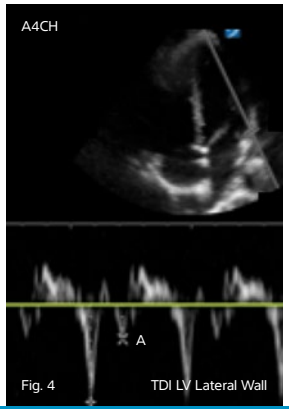

Fig. 4 TDI LV Lateral Wall

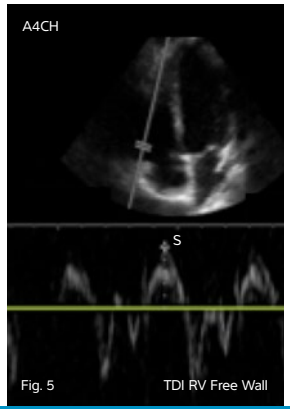

Fig. 5 TDI RV Free Wall

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