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Letter to the Editor

Assessment of Left Ventricular systolic function by Vector Velocity imaging

The article 'Assessment of left ventricular systolic function by vector velocity imaging' by Narayanan et al¹ was read with enthusiasm. The authors have studied 49 patients (mentioned only in the abstract). The authors' introduction to the relatively new technique of vector velocity imaging (VVI) falls short of expectation for an average reader. One may get the impression that VVI is mainly used to calculate the ejection fraction (EF), whereas its mainstay is objective quantification of multidirectional components of left ventricular (LV) deformation and fairly accurate assessment of regional and global function by various parameters like strain, strain rate, and twist characteristics.

Calculation of EF by VVI may have theoretical and practical limitations. The usual methods of calculation of EF by 2D/3D echocardiography or magnetic resonance imaging, nuclear scintigraphy and conventional LV angiogram, are volume dependant calculation, and if done meticulously, are a reliable index of LV function. On the contrary, calculation of EF by VVI is based on velocity and movement of the myocardium i.e. by spatial dislocation and deformation of the myocardium (leave alone Lagrangian or Eulerian concepts). Let us not compare and confuse the EF calculated by two entirely different methodologies giving us another set of values, to which we have to add a "correction factor" (probably variable correction values for various levels of LV dysfunction).

The editorial regarding the article has given a fair update on VVI and its applications, however it has missed the main theme of the article by Narayanan et al. It has not elaborated the short comings of the article.²

In the future, it is likely that EF will still continue to be the most frequently used parameter for LV function for cardiologists, cardiac surgeons and research workers. However the parameters available from VVI may become more useful for decision making for therapeutic and surgical purposes. Global LV longitudinal strain has been well validated as a reliable quantitative index of global LV function and may be in the forefront as an alternative for EF.³ It may become the "throned monarch better than his crown".⁴ Only time will

unravel the future. Prophecy is difficult especially about the future!

Disclaimer

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REFERENCES

1. Narayanan K, Oommen R, Thomson VS, Jose JV. Assessment of left ventricular systolic function by velocity vector imaging. *Indian Heart J.* 2012;64:146–149.
2. Shrivastava S, Paul B. Muscle mechanics by velocity vector imaging—questioning the questions themselves! *Indian Heart J.* 2012;64:150–151.
3. Sergio M, Maurizio G, Donato M, et al. Speckle-tracking echocardiography – a new technique for assessing myocardial function. *J Ultrasound Med.* 2011;30:71–83.
4. Shakespeare W. "Merchant of Venice", Act 4, Scene 1.

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