Which Treatment Is Best for Which Patient in Functional Tricuspid Regurgitation?

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Abstract

A range of treatment options are available for functional tricuspid regurgitation. The type of treatment chosen needs to be tailored to each individual patient according to the stage of the disease.

Keywords

Functional tricuspid regurgitation • Tricuspid annuloplasty • Tricuspid leaflet augmentation • Tricuspid valve replacement • Tricuspid annular dilatation • Tricuspid leaflet tethering

The need for surgical intervention on the tricuspid valve and the most appropriate surgical intervention which should be performed is dependent on the severity of tricuspid regurgitation (TR) and the stage of tricuspid valve disease present. The stage of tricuspid valve disease is dependent on the tricuspid annular size, the mode of leaflet coaptation, and the severity of tricuspid leaflet tethering. As discussed earlier, three stages of functional TR can be recognized; this can be used to help guide treatment [1, 2]:

Stage 1: *The tricuspid annulus is not dilated*, *the leaflets coapt normally from body to body*, *there is no leaflet tethering*.

There is usually no TR or the TR is usually mild in this stage of disease. No surgical intervention is needed.

Stage 2: *The tricuspid annulus is dilated to more than 40 mm*, *the leaflets coapt abnormally from edge to edge only*, *there is no leaflet tethering or only mild leaflet tethering* (*less than 8 mm*)

TR is usually mild or moderate in this stage of disease but may increase in severity depending on right ventricular preload, afterload and contractility. Concomitant tricuspid annuloplasty should be performed at the time of left sided heart valve surgery. Annuloplasty using a rigid ring generally gives the best long term results. However, a flexible band annuloplasty or suture annuloplasty is acceptable if the

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annulus is only mildly dilated and there is no more than moderate TR. A ring annuloplasty is recommended if the TR is severe or if there is severe dilatation of the tricuspid annulus.

Stage 3: *The tricuspid annulus is dilated to more than 40 mm*, *there is no leaflet coaptation*, *leaflet tethering is significant* (*greater than 8 mm*)

TR is usually severe under all physiological conditions in this stage of disease. In addition to concomitant tricuspid annuloplasty at the time of left sided heart valve surgery, the leaflet tethering needs to be addressed to ensure long term durability of the repair. The most appropriate procedure for this is augmentation of the anterior leaflet of the tricuspid valve. If necessary, augmentation of both the anterior and posterior leaflets can be performed. Tricuspid valve replacement is also an appropriate treatment in these patients if repair is not possible.

References

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