

## Learning from Cases and Echocardiography

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### Abstract

Echocardiography for aortic regurgitation (AR), in general, can be simple and very effective for clinical decision making. Simple diagnostic criteria for severe AR are jet width  $\geq 65\%$  of LVOT or vena contracta  $> 0.6$  cm and its for mild AR are jet width  $< 25\%$  or vena contracta  $< 0.3$  cm or no/brief diastolic flow reversal in descending aorta. Moreover surgical indication is also simple as symptomatic severe AR or asymptomatic severe AR with LV dysfunction (EF  $< 50\%$  and/or LVESD  $\geq 50$ mm).

But when it comes to more sophisticated situation for decision making in valve repair or valve sparing surgery (VSS), routine measurement should be extended to the four level measurements, height or effective height of tenting, each leaflet, and sinus Valsalva, and the presence of perforation, prolapse, and cusp restriction. Accordingly, the direction of the jet, the presence of incomplete diastolic closure, tethering, and the difference of the heights among three cusps needs to be described. And AR always should be interpreted in the context of remodeling process in response to aortic disease or dilatation not to miss the subtle leaflet lesion potentially caused by stretching force exerted by remodeling process.

Using TEE as the guide for aortic valve repair or VSS, it seems to be critical to confirm the presence of any prolapse, low effective coaptation height, the absence of eccentric jet suggesting fenestration or prolapse. Practically, absence of more than mild residual AR, effective height  $\geq 9$  mm, and coaptation length  $\geq 4$  mm could be a useful criteria for successful repair.

In clinical context, AR can be tremendously diverse and the clinical course should be monitored very carefully. Especially in acute AR, decreased deceleration time as pressure half time (preferably  $< 250$  msec) may be the only obvious finding for severe AR which corresponds to patient's symptoms.