

Aortic root surgery in acute type A aortic dissection: indication might be the problem

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Recent studies have shown that surgical mortality in acute type A aortic dissection (ATAAD) still ranges from 17% to 26% (1). However, in high volume centers, surgical mortality of ATAAD is less than 11% (2).

The primary goal of ATAAD surgery is prevention of aortic rupture, restoration of blood flow in the true aortic lumen by resecting the primary intimal tear in the aorta, and reinforcing the distal and proximal dissected aortic wall with Teflon felt, glue and various suture techniques (3,4).

Surgical extent is determined by the location of the primary intimal tear. Majority of ATAAD cases are treated with non-total arch replacement (non-TAR). However, some experts have concluded that an extensive replacement of the dissected aortic arch or TAR may reduce the chances of distal aortic dilation and reoperation. Some authors have corroborated these findings to identify the impact of newly developed or residual intimal tears on aortic dilation and reintervention.

Similar to a dissected aortic arch, dissected aortic root is the one of the reasons for aortic root dilation, coronary malperfusion, and reoperation (5-9). Various types of aortic root repair include conservative repair (CR) and root replacement (RR), CR which leaves the sinus of Valsalva, includes valve resuspension, Neomedica, and Uni-Yacoub procedure. RR includes Bentall's procedure, root remodeling and reimplantation. The generally accepted indications for CR included no intimal tear at the root, no connective tissue disease, and root diameter <4 cm in patients aged <65 years and <4.5 cm in those aged >65 years (3).

Many authors have reported that as compared to CR, RR

was not associated with increased hospital mortality (1,6,7). And, in terms of reoperation, some studies have reported RR to appear to be protective against aortic reoperation (1,8), while some haven't (6,7).

Chiu *et al.* (8) reported that CR was associated with increased risk of late reoperation, also mentioning limitations of other studies. However, their study also had limitations. In their study, 6 patients underwent reoperation, out of which 5 underwent initial operation using biological glue (gelatin-resorcinol-formaldehyde glue). Of those, one patient underwent reoperation due to a pseudoaneurysm. There are some evidences regarding toxicity of biological glue on aortic tissue (9). It does not completely rule out the possibility that biological glue may cause aortic dilation. Two patients underwent reoperation 7 and 18 days after the first operation, respectively, because of early aortic insufficiency. In my opinion, the initial diameter of aortic root may have been larger in these 2 patients, than the others. Needless to say, the diameter of aortic root was a risk factor of proximal reoperation [hazard ratio (HR) 1.1, 95% confidence interval (CI): 1.02-1.18, P=0.009] (10).

Nevertheless, it seems clear that there is a possibility of reoperation during the follow up period after CR. However, maybe this possibility is just due to the "presence" of an aortic root. As suggested by evidence till date, I feel that RR may be indicated even in cases with smaller diameter of aortic root. In patients with ATAAD, proximal reoperation is not a procedure related matter, but an indication related matter.

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Footnote

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