

Aortic root management in acute type a dissection surgery

Akut tip A diseksiyon cerrahisinde aort kökü tedavisi

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Acute type A aortic dissection (ATAAD) surgery is different from elective surgeries of aortic root and ascending aorta due to higher fragility of tissues, increased operative mortality and mortality, and long-term increased rates of reintervention. In particular, proximal repair (aortic root management) and distal repair strategies are the most important factors affecting the long-term patient outcomes.

In their retrospective study regarding aortic root management, Kose et al.^[1] studied 68 patients with a mean age of 54.2±10.1 years for an average of 4.9±3.1 years following a root protective surgery (supracoronary graft interposition without commissural resuspension). Of 64 patients, 32 (47.06%) had sinus of Valsalva (SOV) dilatation (SOV diameter: 5.23±0.61 cm), while 36 (52.94%) had normal SOV (SOV diameter: 3.74±0.43 cm). The authors concluded that preoperative SOV diameter was a risk factor for aneurysmatic dilatation. A diameter of 4.05 cm and above was calculated as a cut-off value for developing dilatation requiring reoperation.

In ATAAD surgery, it is important to consider patient's clinical status before surgery, severity and mechanism of aortic regurgitation (AR) and presence of coronary malperfusion. Aortic regurgitation is often caused by a dissection flap extending below the sinotubular junction, causing detachment and prolapse of one or more of the aortic valve commissures. Therefore, determining the aortic root diameter preoperatively via computed tomography scan or echocardiogram may not be sufficient alone in deciding on a surgical strategy. Rather, an intraoperative decision-making process after the restoration of the aortic root and resuspension of the commissures should be used in determining the next steps.

According to the current guidelines, in patients with a partially dissected aortic root but no significant leaflet pathology, aortic valve resuspension is recommended over valve replacement (Class I). In patients with extensive destruction of the aortic root, a root aneurysm, or a known genetic aortic disorder, aortic root replacement is recommended with a mechanical or biological valved conduit (Class I). In selected patients who are stable, valve-sparing root repair may be reasonable, when performed by experienced surgeons (Class IIa).^[2] If the tear is in the non-coronary sinus, replacement of a single sinus might be considered (partial remodeling).^[3] In bicuspid aortic valve, some retrospective series have shown that patients with ATAAD present at a younger age and undergo root replacement more often than those with tricuspid valves.^[4,5]

Several retrospective studies have compared the early and late outcomes after root replacement versus root repair. In these studies, the diameter of the aortic root above ≥4.5 cm was one of the indications of the root replacement.^[6] The reason that Kose et al.'s^[1] study found a preoperative SOV diameter of ≥4.05 cm as a reoperation risk factor could be not resuspending the commissures and having a younger patient population in the study. In my professional opinion, further studies are necessary to correlate the preoperative SOV diameter and reoperation risk.

In conclusion, we should make the final decision of aortic root preservation or replacement based on our surgical experience and judgement. We need to maximize long-term benefit, but also consider limiting the early operative risk.

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