

The question of preference for Ross operation in adolescents

Adolesanlarda Ross ameliyatı üstünlüğü ile ilgili sorular

The article "Early double valve re-replacement after Ross operation" by Özkara and associates (1) raises fundamental issues relative to aortic valve replacement in children and young adults. Clearly, no ideal solution other than palliative surgical treatment of some form is available for irreparable aortic valve pathology and, currently, complex aortic valve repair allows very limited freedom from repeat operation (2). This dilemma leads many institutions world-wide to recommend aortic valve replacement using the pulmonary autograft (the Ross operation, or more appropriately the "Ross principle"), in spite of the awareness of all short-comings of this therapy (autograft dilatation, autograft dysfunction, homograft dysfunction) (3). Given that reoperation is a likely scenario in the life of Ross patients, autograft valves represent yet another form of palliation of aortic valve disease in the young. Certainly the most physiological and hopefully the most durable. Contraindications to the use of pulmonary autograft have since been defined, including connective tissue disorders (inherited and acquired), and rheumatic valve disease. Geographical and socio-economic variables, which drive selected centers to resort to the Ross operation in the latter clinical setting, must not lead to underscore the fact that rheumatic disease is a chronic process which will eventually affect autograft valves, as well (4). The case described by Özkara and co-authors (1), however, presents elements of ambiguity, as histological findings of the explanted autograft leaflets are not reported and root dilatation appeared to be the primitive event leading to valve dysfunction. It is likely that both valve and root were equally affected by inflammation, necrosis and reparative fibrosis of rheumatic origin. Therefore, surgical options entailing preservation of the autograft valve would certainly not have applied in this setting. Nonetheless, experience with root remodeling in dilated autografts has grown from the stage of anecdotal reports to the stage of selected clinical series (5). Although only mid-term clinical follow-up is yet available, functional outcome is promising. The Ross-Yacoub conversion, as some authors have named the procedure, is currently being investigated as a means to salvage dysfunctional autograft valves and to allow the "Ross principle", with its attendant advantages, to survive. Contrary to autograft root pathology, dysfunction of right-heart conduits in Ross patients has shown prevalence lower than expected (3, 6). This observation, however, has been reported in series where pulmonary homografts were the preferred substitutes to repair the right heart. Fate of xenografts, either stented or stentless, used in the

same position seems to be poorer. Clearly, application of porcine or bovine xenografts in children and adolescents is contraindicated, as structural deterioration occurs at higher rate. Whether compression by autograft root aneurysm may also account for degeneration of the porcine bioprosthesis in the case reported herein is questionable. In fact, in series describing high prevalence of autograft root dilatation and reoperation concomitant dysfunction of the right-heart conduit due to extrinsic pressure has not been observed (7).

Ultimately, the question of preference of pulmonary autografts over mechanical prostheses in adolescents winds down to choice of complications of the one therapy over the other and must be based on preferred life style by the individual patient and family.

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