Surgical and endovascular treatment of adult aortic coarctation: twenty years experience center

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Topic(s):
Noncoronary Cardiac Intervention

Background: Aortic coarctation accounts for 5 to 8% of the congenital heart diseases. In adult patients, an expected mortality of 75% at 43 years old was reported.

Conventional surgery was the gold standard in the treatment of these patients. Currently with the advancement of endovascular procedures, angioplasty with or no stenting is increasingly indicated.

Methods: We report a retrospective, monocentric observational study of 57 patients treated for aortic coarctation surgically or by endovascular approach over a period of 20 years, from 2000 until 2020.

Results: The median age was 22 years with extremes of 15 and 65 years and the sex ratio was 1.42. All patients were hypertensive. The median of the trans-stenotic gradient was 60 mmHg. Surgical repair consisted mainly of resection-anastomosis using the Crafoord technique in 25 patients (44%) and interposition of a Dacron tube in 22 patients (39%). Endovascular treatment with stenting was done in seven patients.

Post-treatment gradient was 10 mm Hg ± 5 and no deaths were observed at 30 days. After an average follow-up of 70 months, residual hypertension was found in seven cases without any re-coarctation and in the univariate analysis, the main factors significantly associated with this residual hypertension were: age (p=0.11), pre and post-operative gradient (p=0.097), severe hypertension (p=0.12), developed collateral circulation (p=0.07), bicuspid aortic valve (p=0.15) and diaphragm shape (p=0.07).

Conclusion: The gold standard treatment remains the surgical correction but in selected patients, the endo-vascular repair is a valid option. We propose a decision-making algorithm based on the results of our study (Fig)
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![Decision-making algorithm](image-url)