

Stent Implantation for Native and Recurrent Coarctation of Aorta

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Abstract

Objective- This study was performed to evaluate the early results of stent implantation for aortic coarctation or recoarctation.

Methods- 19 patients with a mean age of 21 ± 12 years with aortic coarctation, 14 native and 5 recoarctations, were treated by stenting in our center over a period of two years. The mean peak systolic pressure gradient across the coarcted segment was $54 \text{ mmHg} \pm 14 \text{ mmHg}$.

Results- The procedure was effective in all 19 cases. Immediately after stent implantation the mean peak systolic gradient fell to $6\pm 4 \text{ mmHg}$ ($P < 0.001$). Complications occurred in 2 patients (stent migration in 1, edge dissection in another patient).

Conclusion- Stent implantation for aortic coarctation and native coarctation gives good immediate results. Non-invasive studies including spiral CT scan and echocardiographic study is recommended for follow-up after stent implantation in order to evaluate long-term results (*Iranian Heart Journal 2006; 7 (3):5-8*).

Key words: coarctation of aorta ■ stent implantation ■ recurrent coarctation of aorta

The optimal treatment for coarctation of the aorta is still controversial. Although balloon angioplasty of aortic coarctation gives acceptable immediate results, aortic dissection, aneurysmal formation and recurrent obstruction has been observed.¹⁻³ since the late 1980s, balloon expandable stents have been used in the treatment of peripheral and coronary artery disease.² after balloon dilatation, vessel recoil may lead to restenosis. Stents prevent this acute recoil of aortic wall after dilation of coarctation.⁴⁻⁹ In addition; the integrity of the vessel is maintained by preventing the extension of any vessel dissection that may have occurred after balloon angioplasty.

We report our experience of stent implantation in both native and post-operative coarctation of the aorta in adolescent and adult patients.

Methods

In a two-year period from 2005 to 2006, 19 patients underwent endovascular intervention. The mean age of the patients at the time of procedure was 21 ± 12 years. There were 11 males and 8 females; 14 patients had native coarctation and 5 had aortic recoarctation. Associated congenital cardiac defects were found in 3 patients. Two of them had small patent ductus arteriosus. One patient had mild aortic stenosis which had not required treatment at the time of the procedure. Indications for stenting included angiographic evidence of significant narrowing of the aorta and a peak systolic pressure gradient of more than 20 mmHg between the ascending and descending aorta determined at cardiac catheterization.