

Pediatric and Congenital Heart Disease

From Bare to Covered

15-year single center experience and follow-up in trans-catheter stent implantation for aortic coarctation

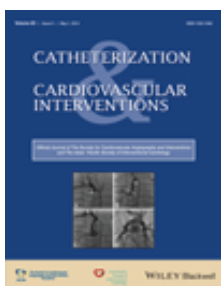
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- Abstract
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Keywords:

aortic coarctation; transcatheter; stent; treatment

Background

Bare stents has become the first line therapy for aortic coarctation. Covered stents has been reported more recently in clinical practice.

Objectives

The present study, reports comparatively 15-year experience of bare and covered stent implantation for aortic coarctation in a single tertiary referral center.

Methods

From 1997 to 2011, 143 patients with native or postoperative aortic coarctation were treated at our institution. Seventy-one subjects (median age 17 years (range from 4 to 70 years) underwent bare stent implantation (Group 1) while 72 patients (median age of 17.5 years (range from 6 to 68 years) underwent covered stent implantation (Group 2).

Results

Success rate in the whole group was 95%. More complex and tighter coarctations were treated using covered stents. Incidence of related-procedure adverse events was higher in Group 1 than in group 2 (21.1% vs. 8.3% $P=0.035$). Aortic wall complications occurred in 7% of patients in Group 1 (one death) and 0% in Group 2 ($P=0.028$). Subjects in Group 1 had a longer follow-up (median 85 vs. 35 months; $P<0.001$). Independent predictors associated with reintervention included the presence of complex lesions (HR: 2.70; CI: 1.15–6.32), balloon diameter used <14 mm (HR: 3.76; CI: 1.48–9.55), and immediate residual gradient >10 mm Hg (HR: 4.30; CI: 1.96–9.47).

Conclusions

Both bare and covered stent implantation for aortic coarctation is a safe and efficacious treatment. By using covered stent implantation the spectrum of patients treated has increased with lower rates of acute and late complications. © 2014 Wiley Periodicals, Inc.

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