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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

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.

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KEYWORDS: aortic coarctation; stent; transcatheter; treatment

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