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Mid and long-term follow up after stent implantation for aortic coarctation.

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Introduction
Stent implantation to treat aortic coarctation is nowadays a usual technique in adolescents and adults. There is lack of evidence among the mid and long term results of this technique.

Patients and methods
We performed a retrospective study of the follow-up of the patients with native aortic coarctation and recoarctation treated by stent implantation in our hospital.

Results
Between April 1997 and June 2018, 95 patients were treated with stent implantation (69 recoarctations and 26 native).

Age	16.5 years (IQR 13.58- 21.91)
Weight	58 Kg (SD 18.1)
Time since surgery	15.7 years (SD 7.45)
Type of stent implanted	CP (42.9%) CP-covered (17.6%) EV3 (14.3%) Palmaz (9.9%) Other (15.3%)
Follow-up	6.6 years (SD 4.34) (maximum 18.4 years)

We analyzed the mid and long term outcome of the 68 patients with a follow-up longer than 3 years. The follow up visits included EKG and echocardiography in all patients. In 42 patients an additional imaging technique was performed during follow-up: CT scan in 19 patients, cMRI in 16 patients and 21 catheterizations. A second interventional procedure was indicated in 19/42 (45.2%) patients: 9 stent re-dilation, 7 new stent implantation and both procedures in 3 patients. Complications were more frequent in patients in which the stent was implanted at a younger age (< 14 years) (73% vs 27% p< 0.001). Stent fractures were diagnosed in 6/42 patients (14.3%), at a median time of 4.5 years (IQR 2.50-6.20) after stent implantation (range 2.1-12.5 years). Stent fractures were only visible in CT scan or fluoroscopy, not in CMR. Aneurisms in the coarctation site were diagnosed in 5 patients (11.9%).

Conclusions
Although stent implantation as treatment for aortic coarctation is an effective, feasible and safe technique, 45.2% of the patients will require an intervention during mid-term follow-up. Fluoroscopy and CT scan with 3D reconstruction should be incorporated in the follow-up of aortic coarctation patients after stent implantation.