Percutaneous treatment of aortic isthmus atresia: use of radiofrequency perforation and covered stents

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Limited data exist in literature concerning the percutaneous treatment of aortic isthmus atresia.
Background
Background
Patients
(Jan 07 – Nov 10)

- Forty pts were treated by using covered stents
- Five pts aortic isthmus atresia
- All subjects had systemic arterial hypertension
- Median age 48 years (range 32-63 years)
- Two subjects previous history of brain bleeding
- In other two subjects it was discovered at the time of myocardial ischemia
**Procedure**

- General anaesthesia with patient intubated
- Radial and femoral access
- RF system: Nykanen 0.024 » RF guidewire and coaxial microcatheter
- Goose neck snare catheter
Procedure

- Creation of an artero-artero circuit

- Pre-dilatation with coronary balloons and peripheral angioplasty balloons

- Twelve Fr long sheath
  - 3-4 F > than the one needed for balloon angioplasty (CS)

- Covered CP 8 zig stents (28,34,39,45)
Results

- Successful device deployment was achieved in all patients

- Fluoroscopy time: median 30 minutes (range 20-35 minutes)

- Procedure time: median 90 minutes (range 65-100 min)

- No early complications
**Results**

Peak-to-peak pressure gradient (mmHg)

Vessel diameter (mm)

$p<0.01$
RESULTS
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RESULTS
Follow-up

- Median follow-up:
  20 months (range 6-48 months)

- No complications

- Anti-hypertensive drugs: 1 pt

- Post dilation in one pt because of a conservative approach at the time of procedure
Conclusions

Aortic isthmus atresia can be treated safely and successfully by using RF energy and covered stent implantation.