Coarctation of the abdominal aorta: Endovascular treatment with bare CP stent

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Disclosure

Speaker name:

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Coarctation of the abdominal aorta

• Rare disease that presents in children and young adults.
• 0.5%–2% of all the cases of aortic stenosis.
• Causes:
  1. Congenital anomaly in the development of the abdominal aorta;
  2. Acquired conditions: Neurofibromatosis, retroperitoneal fibrosis, fibromuscular dysplasia, mucopolysaccharidosis, intrauterine infections and Takayasu’s arteritis.
CASE

• 18 years old female exhibiting arterial hypertension, absent femoral pulses, abdominal bruit, and claudication of the lower limbs.

• CT shows an infrarenal narrowing of the abdominal aorta (4.3 mm at its smallest point).

• Cath lab: Gradient of 40 mmHg between the suprarenal and infrarenal aorta.

• Aortogram: Severe segmental stenosis 2 cm below the renal arteries. Collateral circulation from the SMA to the IMA was present. The IMA has its origin immediately below the stenosis and two left polar renal arteries have their origins at 1.5 cm below the stenosis.

• Takayasu`s arteritis: ACR criteria 4/6.
CT and ANGIO
TREATMENT

• Medical treatment: Corticosteroids.
• Endovascular treatment: Angioplasty with a bare CP stent with the intention of treating the coarctation without occluding the visceral vessels that were below the stenosis.
TECHNIQUE

• General anesthesia.
• Ultrasound guided puncture of the right common femoral artery.
• 12 Fr sheath over stiff guidewire.
• Angioplasty with a bare CP stent of 8 zigs x 45 mm. The stent was expanded by inflating a BIB of 10 mm of diameter. Later, the mid and distal part of the stent was post-dilated with a Mullins balloon of 14 mm of diameter.
• Back-up with a covered CP stent if aortic rupture happens during the procedure.
Bare CP stent placement

Final Result
CT post-intervention
Results and Follow-up

- The gradient fell to 5 mm Hg.
- The patient was discharged uneventful 24 hours later. On her outpatient follow-up, she remained normotensive and reported complete resolution of claudication symptoms in both legs.
CONCLUSIONS

- Endovascular procedure is a good option to lower BP and alleviate symptoms.
- Location of the stenosis, length of the segment, and extent of visceral vessel involvement are all factors to consider.
- Management is therefore multidisciplinary, requiring an individualized approach depending on the severity of clinical presentation, response to medical therapy, and extent of end-organ damage.
Thank You
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