Delayed Aortic Rupture Complicating Balloon Angioplasty in a Case of Takayasu arteritis: Case Report With Mid-Term Follow Up And Literature Review

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28-year-old lady with long standing hypertension since the age of fifteen.
She has been on diuretic, beta blocker, calcium channel blocker and ARBs.

Complaining of:
- Uncontrolled hypertension
- Long standing exertional chest pain
- Lower limb claudications
- Symptoms suggestive of postprandial angina.

Blood pressure = 190/110 mm Hg in the left arm, 110/70 mm Hg in the right arm.
Bilaterally impalpable femoral pulses.

Dilating the lesion with a 18×40mm balloon (ATLAS, Bard PV, US) which was inserted sheathless, it was inflated three times up to 16atm.
Esophageal balloon (XXL, Boston scientific, US) 18x40 was used and inflated once.
A final angiogram was taken with dilatation of the stenotic segment of the descending aorta.

- Drop of blood pressure > 90/60
- Hemoglobin drop

Urgent CTA:
- Aortic rupture at the site of the previous dilatation (red arrow)
- Dissection in the descending aorta (green arrows)
- Bilateral hemothorax, para aortic hematoma

A 300cm, 0.035 inch wire was inserted and an angiogram was taken using a 14Fr long sheath (Cook medical, US) AP view which showed the leakage.

- CP stent (NuMed Inc, Hopkinton, NY) 8x39mm premounted on (Z-MED II, Hopkinton, NY) balloon 22x40mm was deployed
- Completion angiogram showed perfect sealing of the rupture and perfect opacification of the visceral vessels.

Discussion

- This is the first reported case of delayed aortic rupture post angioplasty for Takayasu arteritis
- We suggest that the complication in our case was related to balloon oversizing
- The aortic diameter just proximal to stenosis was 13mm, while we used a 18mm balloon as the aortic diameter distal to the stenosis was 20mm
- Most published reports recommend choosing balloon size no more than 1 or 2mm larger than the proximal aorta.

Conclusion

- Avoid balloon oversizing
- The aim of aortoplasty should not be morphological result but should be guided by reduction in gradient.
- Covered stent must be available as bailout procedure in case of aortic rupture

Follow up

At 6 months follow up:
- Controlled Blood pressure
- Controlled symptoms
- Bilaterally intact pedal pulses

At 15 hours later:
- Initial decrease in blood pressure without medications
- Drop of blood pressure → 90/60
- Hemoglobin drop

At 6 months follow up images:

- Controlled Blood pressure
- Controlled symptoms
- Bilaterally intact pedal pulses