TEVAR to the False Lumen of a Chronic Type B Aortic Dissection with Aneurysmal Dilatation When There are no Other Options: A Novel Technique

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Disclosure

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)

X I do not have any potential conflict of interest
TEVAR Concept in Aortic Dissection

- Closure of proximal entry tear
- Depressurization of FL
- Thrombosis of FL
- Redirection of blood flow to TL
- Induction of aortic remodelling
Case Presentation

- 72 years old gentleman.
- PMH: CHF, DM, HTN, COPD on home O2.
- ER (another hospital): chest pain and cold Lt LE.
- Stat CTA: Type B aortic dissection started distal to LT SCA down to Lt iliac bifurcation causing complete occlusion of LT iliac artery.
- Emergency bilateral iliac kissing stent done and patient’s symptoms resolved.
- Dissection treated medically only.
Follow Up

• One year CTA follow up revealed:
  – Large 7.5cm proximal thoracic aneurysm.
  – Complete occlusion of true lumen of mid thoracic aorta.
  – Celiac, SMA, LT renal off true lumen, Rt renal from false lumen.
  – Complete occlusion of true lumen of infra renal aorta to aortic bifurcation.
  – Patent bilateral CIA stents
• No LE pain or abdominal angina.
Procedures

- Two attempts to recanalize the true lumens from the femoral and brachial approach were not successful.
- Patient referred to us almost after two years because of his enlarging thoracic aneurysm (8.6 cm).
- Distal thoracic aorta and IR aorta are normal in size (False lumen).
- Patient C/O chronic back pain.
Complete occlusion of true lumen

Large Proximal Tear

Bilateral iliac stents

Celiac
SMA
Renal

Re-entry sites
Complete occlusion of true lumen

Bilateral iliac stents

Large Proximal Tear

Re-entry sites
Intra OP Angiogram
CTA follow Up

One year

Two years
Two years CTA follow Up
Thoracic Endovascular Aortic Repair into the False Lumen in Chronic Aortic Dissection

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Background: Deployment of a stent graft for the treatment of aortic dissections is normally performed in the true lumen. However, in some rare occasions landing in the false lumen may be appropriate.

Methods: We present 2 different cases of chronic aortic dissection, where we opted to land the stent graft into the false lumen to treat the associated aneurysm.

Results: For the first case, the goal of thoracic endovascular aortic repair (TEVAR) was to exclude the aneurysm from within the false lumen because of a slit-like true lumen. In the second case, the visceral arteries came off the false lumen, with the renal vessels from the true lumen. False lumen TEVAR was performed, and the infrarenal aorta fenestrated, as to ensure adequate perfusion.

Conclusions: These different clinical scenarios show how false lumen TEVAR for chronic dissections with associated aneurysms can be an alternative treatment approach and highlight the importance of assessing the origin of branch vessels and the possible necessity of reperfusion of these, before TEVAR is performed.
Fig. 2. Postoperative computed tomography scan
Conclusions

• Every attempt has to be done to deploy TEVAR inside true lumen in complicated Type B aortic dissection.
• In case of chronic occlusion of the true lumen with aneurysmal dilatation of the aorta, surgical repair should be the treatment of choice.
• In high risk patient and with localized dilatation of false lumen and slit-like true lumen, we feel covering the aneurysm with TEVAR inside the false lumen is an option.
• The long term durability of this repair need to be validated.