Update on Natural History of Intramural Hematomas (IMHs) and Penetrating Aortic Ulcers (PAUs): When Should They Be Treated By TEVAR And When Not: Prognosis After Treatment

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Definitions

IMH
Intramural Hematoma
Hemorrhage within the aortic wall with no evidence of intimal tear

PAU
Penetrating Aortic Ulcer
Ulcer-like disruption of the intima

IMH management

IMH management and treatment currently mirrors that of Type B aortic dissection:

Optimum Medical Therapy
Ca²⁺ channel blocker
β-blocker

Enhanced Follow-up
CTA
MRA

Intervention/Discharge
TEVAR
Open Monitoring

Treatment of IMH with TEVAR

• TEVAR for IMH indicated for:
  • Persistent Pain after Medical Therapy
  • MAD >55mm and significant peri-aortic hemorrhage
  • Hemodynamic Instability
  • 3-year aortic event-related mortality for IMH with TEVAR ~ 7.1%
  • Appropriate sizing (0-5%), coverage and placement are integral to outcome

Treatment of PAU

• TEVAR for PAU indicated for:
  • PAU complicated by associated aortic disease (dissection, aneurysm, IMH, rupture, fistula)
  • Persistent or recurrent symptoms
  • Aortic diameter >55mm or mean growth rate ≥5mm at level of PAU
  • 5-year freedom from cardiovascular events: 67.8%
  • Aortic-related mortality after TEVAR (at a mean of 17.3 months): 4.1%

Disclosures

• Consultant for Gore Medtronic


Risks

- Risks for treatment:
  - Endoleak
  - PAU with IMH is associated with more extensive disease and greater rate of complications
  - Rate of stroke similar for TEVAR and open repair of PAU

- Risks for non-treatment:
  - TBAD
  - PAU: development of IMH
  - Intractable pain
  - Rupture

Case: IMH

Severe Aortoiliac Occlusive Disease

- Occluded stent within right common iliac
- Large REIA to Aorta collateral development
  - On right side, crossed through previously placed stent, then had to go subintimal at aortic bifurcation, used Pioneer to re-enter
  - Predilated right common iliac with 4mm balloon just to pass 5F pigtail catheter
- Predilated left common iliac artery with sequential 6mm – 7mm – 8mm balloons

Case: IMH

- Left external iliac artery
  - Attempted to close primarily, but there was limited flow distally
  - Reclanped, repaired small area of dissection in external iliac artery with bovine patch

- Arteriogram: had flow through stents, but left common femoral artery was diseased

- Opened left groin and placed another 7mm x 50mm Viabahn in left common femoral artery

Case: IMH

- 59 year old female
- Persistent intrascapular back pain
- IMH in descending thoracic aorta
- Attempted aggressive anti-impulse therapy pursued with continued IMH dev
- Severe aortoiliac occlusive disease

Case: IMH

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Treatment

- LCC – LSA Bypass
  - TEVAR with coverage of LSA
  - 8mm x 30cm Terumo
  - 31mm x 31mm x 182mm Navion

Conclusions

- Aggressive anti-impulse therapy with close surveillance is mainstay of therapy
- TTE/TEE should be used to assess ascending aorta and aortic valve in this patient subset
- Delayed intervention with TEVAR is an important component in the treatment of these patients but is often not required
- Close surveillance of the patients will improve longer outcomes