Combined stent graft and multilayer bare stents for thoracoabdominal pathologies

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Disclosure
- I have no conflict of interests to disclose

Treatment of thoracoabdominal aortic aneurysms (TAAAs) remains challenging
Traditional open surgery is the treatment of choice

• In 2014, Sultan reported the results from MFM Registry with 103 cases of aortic diseases
  • A total number of 378 branches were covered (3.7/case)
  • The total number of MFM used was 176 (1.71/case)

1-year outcomes
- Aneurysm related survival 91.7%
- All-cause survival 86.8%
- One-year intervention free survival 89.3%
- Aneurysm rupture 0%
- Patency of branch 95.3%
- SMA occlusion 1 (0.99%), death
- Renal artery occlusion 1, no dialysis needed
- Paraplegia 1 (0.99%)
- Reintervention 4

Open surgery: significant morbidity and mortality
Branched/fenestrated stent: important therapeutic alternative with limitations
Multilayer flow modulator (MFM) stent: a new promising strategy
Combined stent graft and multilayer bare stents for TAAAs in our center

- From 2012-2015, 8 patients with TAA (ages ranging from 26-75ys, mean 57.2±15.1ys) were treated in our center
- Follow up 1-36months (mean 12ms)
- CTA shows the maximum aneurysm diameter and blood flow diameter decreased in all cases
- All branch vessels remain patent
- All patients survive without reintervention
- All patients received long-term aspirin and clopidogrel after surgery

Case 1

- 64y male, previous surgery for AAA
- TAA was found 1 year ago
- Max φ 55mm, SMA 10mm distal to aneurysm

Procedures

1. A bare stent was implanted to serve as a “bridge”
2. A stent-graft was deployed with distal end just above SMA
3. Another bare stent was implanted across the SMA

Aortogram

The first bare stent (OptiMed, 28-100mm) was implanted
The stent graft (32-32-150mm) was deployed.

The second bare stent (OptiMed, 32-80mm) was implanted.

Aneurysm sac almost disappeared.

Follow up at 3 months:
Residual blood flow in sac, patent branches.

Follow up at 6 months:
No endoleak, aneurysm sac excluded, patent branches.

Case 2:
- 58y old male
- Previous TEVAR for TBAD
- Recurrent abdominal and back pain
CTA

1. A bare stent was implanted to serve as a “bridge”

2. A stent-graft was deployed with distal end parallel to celiac trunk artery

3. Another 2 bare stents were implanted across the tear and SMA

Aortogram

The first bare stent (OptiMed) was implanted

The stent-graft was deployed

The second bare stent (OptiMed) was implanted
The third bare stent was deployed

Completion angiography

1 week after operation
Branches remained patent, flow volume in hematoma decreased, thrombosis volume increased

1 month after operation
Complete sac thrombosis, patent SMA and celiac trunk artery

3 months after operation
Shrinkage of hematoma, patent SMA and celiac trunk artery
Summary

• Combined stent graft and multilayer bare stent is safe and effective in highly selective patients
• Stent graft provides better exclusion of aneurysm
• Multilayer bare stent “creates” landing zone for graft while preserving branches

Thank you