Endovascular Repair of Thoracic Abdominal Aortic Aneurysm with Octopus Technology – a case report

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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
Open surgery for thoracic abdominal aortic aneurysm (TAAA) has a high mortality and high incidence of complications, due to the major surgical trauma.

It is urgent to find a minimally invasive treatment of TAAA.

Hybrid technique to treat TAAA was first reported* in 1999.

◆ First, reconstruct celiac trunk, SMA and bilateral renal artery by open surgery.

◆ Then, repair the aneurysm with stent-graft.

Octopus technique is a total endovascular interventional method, based on currently available abdominal stent graft and branch reconstruction.

Background

- It is first reported * to treat type IV TAAA.
- We have performed one patient who suffered from type III TAAA using Octopus technique.

Case

- 47y, male patient, complained of right lower limb claudication less than 200 m, right buttock and thigh fatigue.
- CTA indicates type III thoracic abdominal aortic aneurysm.
Case

CTA:

- Celiac trunk occlusion
- SMA, bilateral renal arteries stenosis
- Distal abdominal aorta stenosis
- Left iliac artery occlusion.
Past history:
Hypertension grade III.
Left BKA after the failed surgery.
Case

Endovascular or open surgery?

Open:

◆ Young patient with good condition;
◆ Good long-term result.

Endovascular:

◆ Minimally invasive;
◆ The patient refused open surgery.
Endovascular treatment

Difficulties

- The most important access - left femoral artery is unavailable, because the left iliac artery is occluded.

- Conventional octopus technique is not available too, because the diameter of the middle of the descending thoracic aorta is 38.5mm.
Endovascular treatment

Access

- left common carotid artery
- left axillary artery
- right femoral artery.
Endovascular treatment

A tapered stent graft (Relay 36-32*200mm) was introduced through the right femoral approach and deployed close to the left subclavian artery for the descending thoracic aorta.
Endovascular treatment

Advantages

◆ Build a anchoring region for the second graft stent;

◆ Improve the stability.
Endovascular treatment

The second graft stent

(36mm, Endurant, Medtronic)

was deployed next to the first stent.
Endovascular treatment
Endovascular treatment
Endovascular treatment
Endovascular treatment
Followup (1 Year)
With the improvement of endovascular techniques, complex TAAA can be treated by totally endovascular repair. It is a choice for TAAA patients, especially who cannot tolerate open surgery.
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