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

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Disclosure

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Speaker name:

Tong Zhu.

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



Background

- ◆ **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.**

**Quinones-Baldrich WJ, Panetta TF, Vescera CL, et al. Repair of type IV thoracoabdominal aneurysm with a combined endovascular and surgical approach[J]. J Vasc Surg, 1999,30: 555-560.*



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Background

**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.**

**Quinones-Baldrich WJ, Panetta TF, Vescera CL, et al. Repair of type IV thoracoabdominal aneurysm with a combined endovascular and surgical approach[J]. J Vasc Surg, 1999,30: 555-560.*



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Background

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

**Karthik Kasirajan. Branched Grafts for Thoracoabdominal Aneurysms: Off-Label Use of FDA-Approved Devices. J ENDOVASC THER. 2011;18:471–476.*



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Background

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

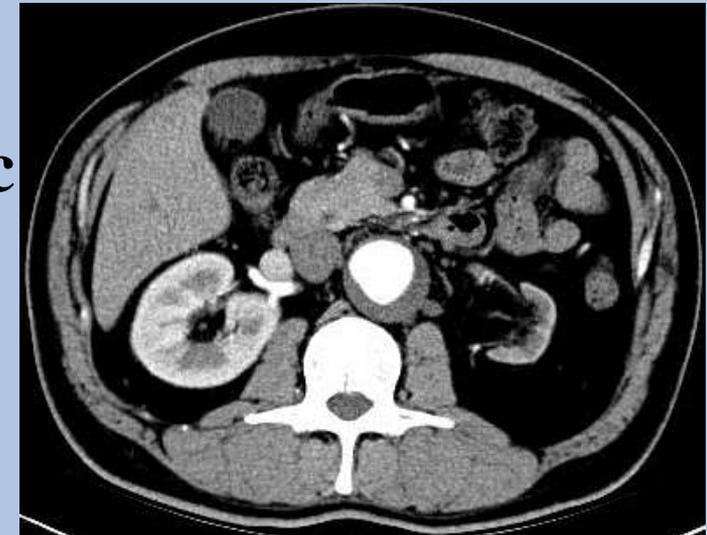
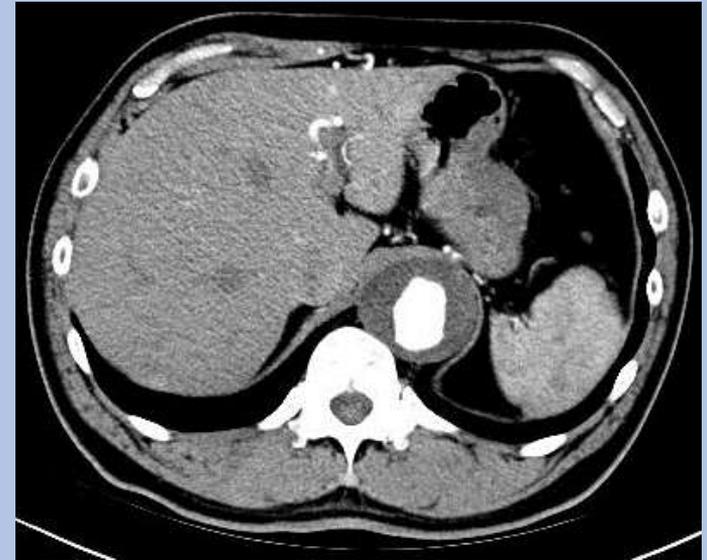
**Karthik Kasirajan. Branched Grafts for Thoracoabdominal Aneurysms: Off-Label Use of FDA-Approved Devices. J ENDOVASC THER. 2011;18:471–476.*



Case

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





Case

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CTA :

- ◆ **Celiac trunk occlusion**
- ◆ **SMA, bilateral renal arteries stenosis**
- ◆ **Distal abdominal aorta stenosis**
- ◆ **Left iliac artery occlusion.**





Case

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Past history :

Hypertension grade III.

**Left BKA after the failed
surgery.**





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Case

Endovascular or open surgery?

Open:

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

Endovascular :

- ◆ **Minimally invasive;**
- ◆ **The patient refused open surgery.**



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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 an anchoring region for the second graft stent;
- ◆ Improve the stability.



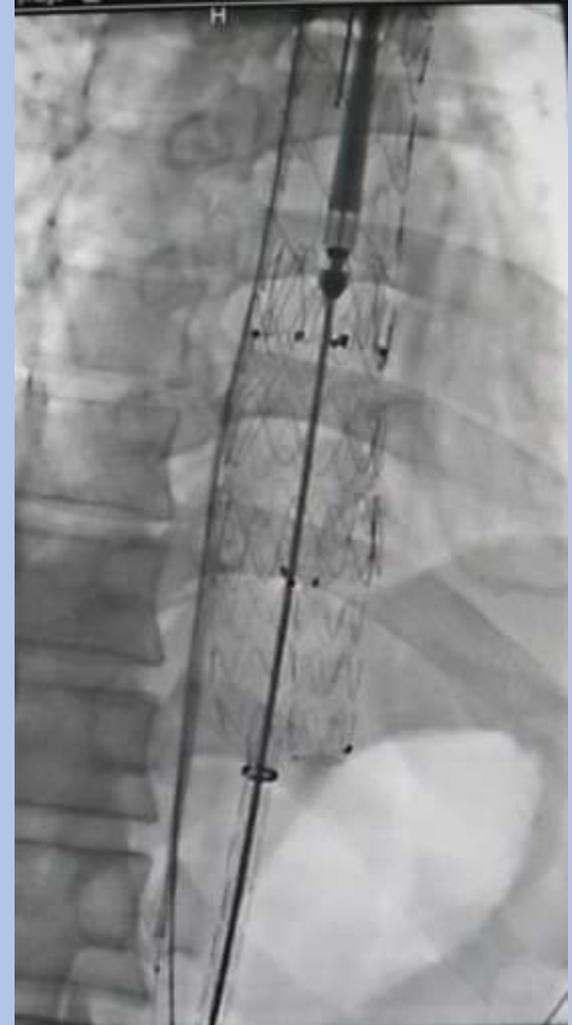


Endovascular treatment

The second graft stent

(36mm, Endurant, Medtronic)

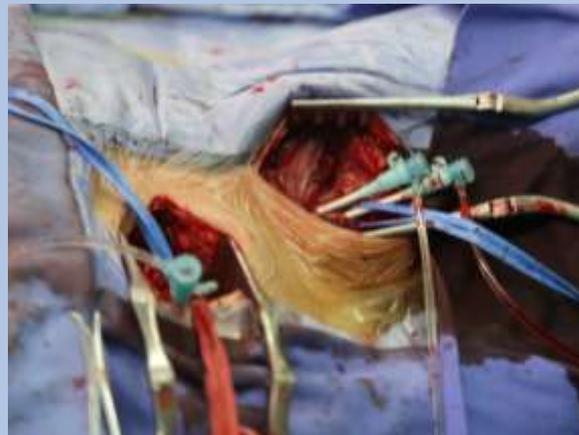
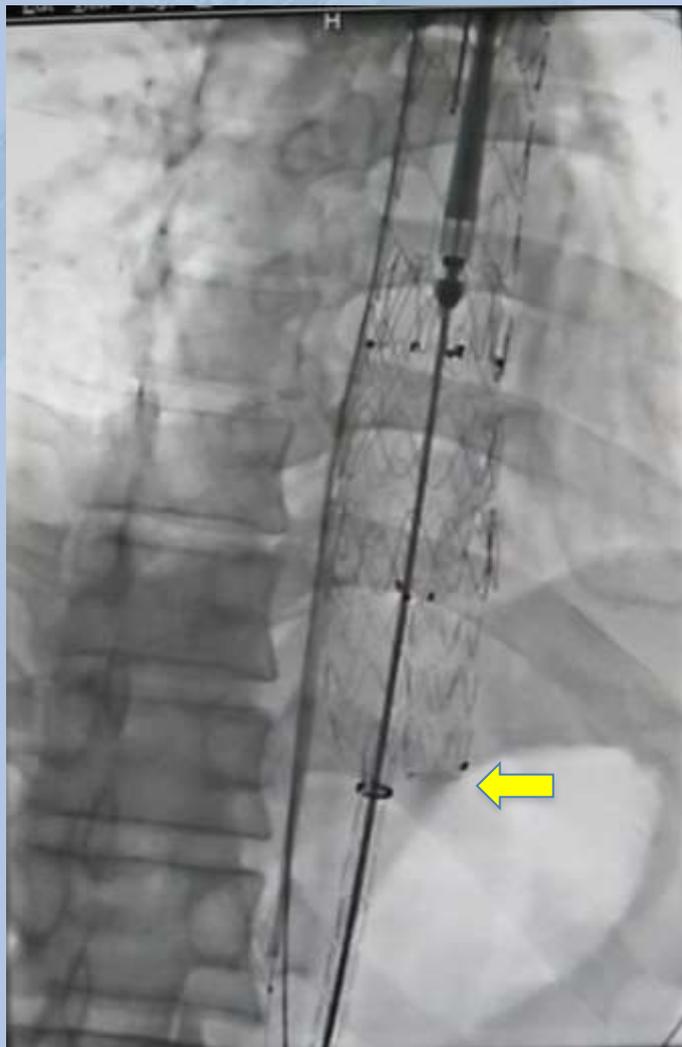
was deployed next to the first stent.





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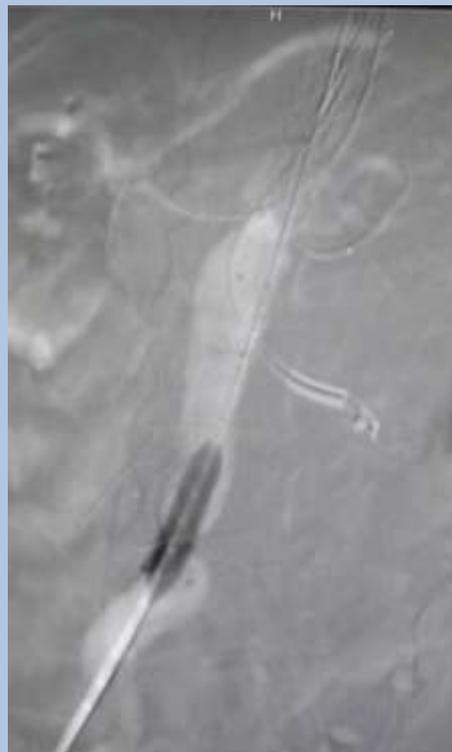
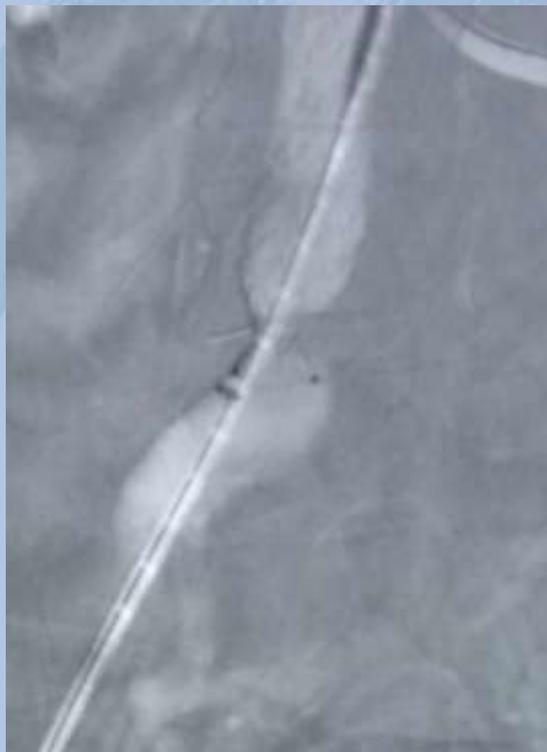
Endovascular treatment





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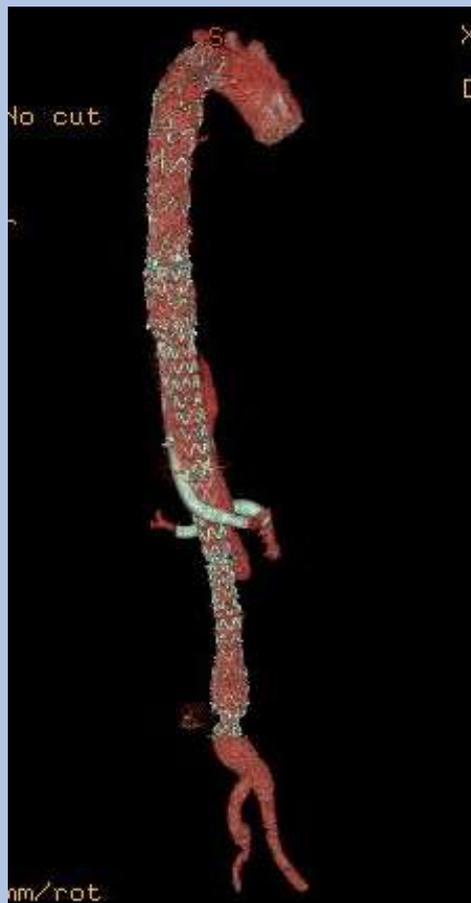
Endovascular treatment





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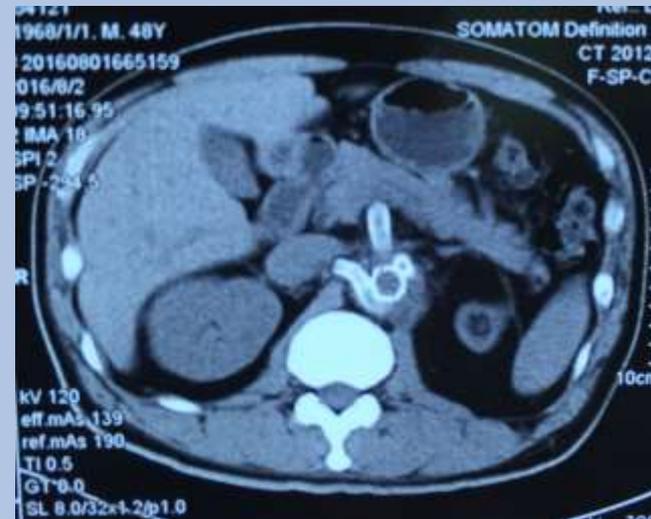
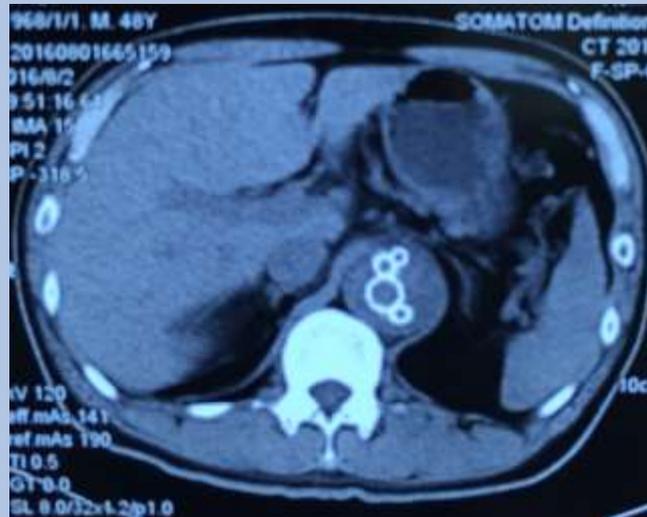
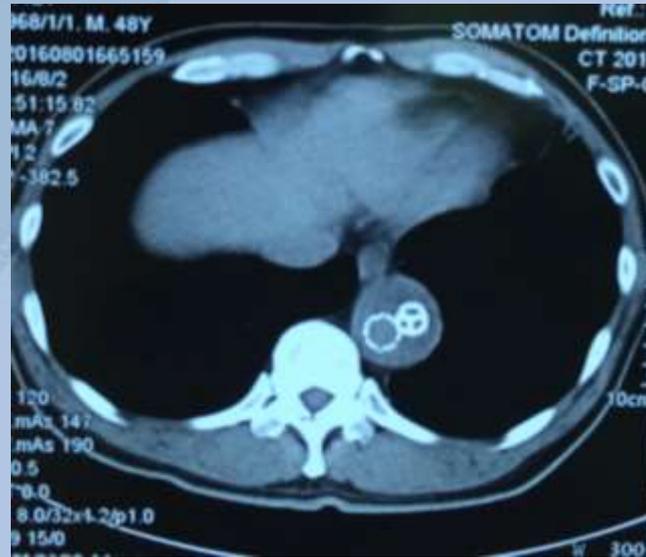
Endovascular treatment





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Followup (1 Year)





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Summary

- ◆ With the improvement of endovascular techniques, complex TAAA can be treated by totally endovascular repair.
- ◆ It is a choice for TAAA patients, especially who can not tolerate open surgery.



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