In Situ Laser Fenestration in Thoracic Endovascular Aortic

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Disclosure

Speaker name: Sen Shi

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
Thoracic endovascular aortic repair (TEVAR) is safe for Thoracic Aortic Disease including aortic aneurysms, aortic dissections, and traumatic aortic transections.

However, when patients have a short proximal landing zone near the aortic arch, there is increased risk of endoleak, migration of the stent graft due to angulation of the aortic arch, and high blood pressure in the aorta for TEVAR.
In our center, we performed 4 cases and found the effective and safe for in situ laser fenestration in revascularization of aortic arch during thoracic endovascular aortic repair.
Methods

After preparation and measured the diameters of the ascending aorta and arch branches by angiography and CTA. Laser Fenestration of 3 aortic branches was performed on aortic arches for 4 patients with aortic artery diseases (dissection type A: n=2, Penetrating ulcer: n=2) under general anesthesia.
Results

The technical success rate was 100%. No fenestration related complications or neurological morbidity occurred after this operation. During a mean postoperative 8-month follow-up (range: 3–12 months), all the left subclavian artery and carotid artery stents were patent with no fenestration-related endoleaks upon computed tomography angiography images.
Case 1  43y male
Stanford A aortic dissections
Fenestration in LCA
Fenestration in BCT

Fenestration in LSA

Balloon dilatation
After stent implant
Case 2  67y, male
penetrating ulcer near the aortic arch.
We could not successfully perform laser fenestration in LSA and change the operation plan to a bypass between two axillary arteries.
Conclusions

In situ laser fenestration is effective, rapid and safe option for revascularize the 3 branches of aortic arch during thoracic endovascular aortic repair. However, follow-up periods should be extended to evaluate the robustness of this technique.
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