INTRODUCTION

The suitability of the proximal and distal landing zones remains one of the main limitations to thoracic endovascular aortic repair. The advent of custom-made scalloped stent grafts widened the endovascular options in some challenging anatomies.

The authors present three cases of thoracic aortic aneurysm (TAA), with three different hostile anatomies, successfully treated with custom-made scalloped stent grafts.

CASE 1

- Male patient, 46 years old
- No relevant medical history
- High speed trauma 10 years before

CTA revealed a 54mm post-traumatic TAA, extending distally from the origin of the left subclavian artery (Fig. 1, 2, 3)

- Inadequate sealing in Ishimaru zone 2 was evident

PATIENT WAS SEQUENTIALLY TREATED BY MEANS OF:

1. Carotid-subclavian bypass
2. TEVAR with proximal scallop to the left common carotid artery

CASE 2

- Male, 76 years old
- Multiple CV risk factors
- Severe Obstructive Sleep Apnea
- Hypothyroidism
- Former smoker

CTA revealed a 65mm TAA, involving the origin of the left subclavian artery (Fig. 4)

- Inadequate sealing in Ishimaru zone 2 (Fig. 4)
- Bovine trunk was noted (Fig. 4)
- Proper sealing in Ishimaru zone 1
- Preservation of all supra-aortic trunks
- No reported complications

PATIENT WAS SEQUENTIALLY TREATED BY MEANS OF:

1. Carotid-subclavian bypass
2. TEVAR with proximal scallop to the bovine trunk (Fig. 9)

CASE 3

- Male, 77 years old
- Multiple CV risk factors
- Severe aortic stenosis
- Kidney transplant in 2003 (Right EIA)

PATIENT WAS SEQUENTIALLY TREATED BY MEANS OF:

1. Celiac plug occlusion (after balloon occlusion test) (Fig. 12)
2. TEVAR with distal scallop to the SMA (Fig. 13)
3. Standart EVAR

CTA revealed:

- 59,3mm saccular aneurysm of the descending thoracic aorta (juxta-celiac) (Fig. 10)
- 40mm saccular aneurysm of the aortic bifurcation (Fig. 11)

The procedure was uneventful, with renal graft preservation and total aneurysm exclusion

CONCLUSION

Custom-made scalloped thoracic stent grafts are an accessible, reproducible and safe therapeutic option when dealing with hostile descending thoracic anatomies, and should be considered as a minimally-invasive effective solution in selected cases.