Technical Tips for open arch replacement in Type A aortic dissections to facilitate subsequent TAAA repair

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Disclosures
- None

Preparing for Descending Repair

RATIONALE

"ARCH DISEASE IS ONLY AN INDICATOR FOR WIDER SPREAD AORTIC DISEASE"

"After the 'cat-is-out-of-the-bag' in type A, the descending aorta is injured"

Duke Cameron, MD

Preparing for Descending Repair

RATIONALE

‘Significant interval loss !’
(death of non-returnees)
Preparing for Descending Repair
CREATING A LANDING ZONE

‘Significant interval loss!’
(death of non-returnees)

Conventional Arch Replacement +
ELEPHANT TRUNK TECHNIQUE

- Creates excellent landing zone—durable, symmetric diameter

Arch Replacement with a Double Graft +
ELEPHANT TRUNK TECHNIQUE

- Technically easy
  (4 simple anastomoses)
- Excellent neuroprotection:
  - bilateral cerebral perfusion during proximal and distal anastomoses
  - resume distal perfusion immediately after ET completion
- Comfortable landing zone for endovascular descending / TAAA repair

Arch Replacement with a Trifurcated Graft +
ELEPHANT TRUNK TECHNIQUE

- Technically more challenging
  (left subclavian anastomosis)
- Excellent neuroprotection:
  - bilateral cerebral perfusion during proximal and distal anastomoses
  - resume distal perfusion immediately after ET completion
- Extensive landing zone for endovascular descending / TAAA repair

Arch and proximal descending disease
FROZEN ELEPHANT TRUNK TECHNIQUE
**Arch Replacement**

**FROZEN ELEPHANT TRUNK TECHNIQUE**

- Excellent for combined arch | proximal descending repair
- Creates perfect landing zone for endovascular TAAA repair

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**Preparing for Descending Repair**

**IDENTIFYING THE LANDING ZONE**
Preparing for Descending Repair

IDENTIFYING THE LANDING ZONE

Fig. 1. Follow-up of descending thoracic aortic graft expansion over 3 years in 43 patients. The minimum 3-year expansion of the descending aortic grafts was 21%.

Preparing for Descending Repair

PLANNING DIAMETERS

Fig. 3. Initial graft expansion (87 days) from initial implant size to the first computed tomography (CT) scan within 7 days after implantation. Figures are shown for different implant sizes, and especially after replacement of the ascending aorta or the descending aortic annulus.

Vascular Graft Replacement of the Ascending and Descending Aorta: Do Dacron Grafts Grow?

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Background. The viability of Dacron vascular grafts is limited by the fact that they do not grow to accommodate increased intraluminal pressure.

Aim. To determine the long-term growth of 20 Dacron grafts placed in the ascending aorta or descending thoracic aorta in 19 patients. Graft size was measured by using chest X-ray and computed tomography (CT) scans to determine the growth of the stenotic segment at 87 days and the follow-up period until a minimum of 2 years.

Methods. Twenty Dacron grafts were placed in the ascending aorta or descending thoracic aorta in 19 patients. The initial graft size was determined by using chest X-ray and computed tomography (CT) scans. The follow-up period was at least 2 years.

Results. The initial graft size was determined by using chest X-ray and computed tomography (CT) scans. The follow-up period was at least 2 years.

Conclusion. The growth of Dacron grafts is limited by the fact that they do not grow to accommodate increased intraluminal pressure.

Fig. 2. Implant according to the first and second computerized tomography (CT) scans after 87 days.

CLIPS (!)
E®-vita open prosthesis (Jotec GmbH, Hechingen, Germany) – This product is not FDA approved for use in the USA

Technical specifications:
1. Hybrid polyester stent-graft prosthesis
2. Stent-graft portion available in diameters 24-40 mm
3. Length 150 mm for diameters 24-30 mm
4. Length 160 mm for diameters 33-40 mm
5. Guidewire within pre-packaged delivery system