USE OF FENESTRATED ENDOVASCULAR ABDOMINAL AORTIC ANEURYSM REPAIRS TO SALVAGE FAILING STANDARD ENDOVASCULAR REPAIRS FROM TYPE IA ENDOLEAKS

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Background

- Endovascular aneurysm repair (EVAR) is minimally invasive technique for repairing abdominal aortic aneurysms
- Alternative to traditional open aortic repair
- Relies on stent graft apposition with healthy non-aneurysmal arterial wall
• Type IA endoleak – leak around proximal graft due to inadequate seal
  • Graft migration
  • Progression of aneurysmal degeneration at proximal neck
  • Anatomic characteristics leading to failed seal over time
• Fenestrated endovascular aneurysm repair (FEVAR) uses custom designed stent grafts which extend proximal seal above visceral arteries

• Technique used to salvage endovascular repairs with IA endoleaks after prior standard EVAR
Objective

• Determine if patient or anatomic characteristics can be used to predict EVAR failures from IA endoleaks
• Identify patients who would be better served with FEVAR (vs EVAR) at index operation for abdominal aortic aneurysm repair
Methods

• Single institution retrospective case series
• Included all patients undergoing reoperative FEVAR between 2018 and 2021 for IA endoleak after prior EVAR
Methods

• Anatomic neck characteristics at index operation
  • Maximum aortic diameter
  • Neck length
  • Diameter above each visceral vessel
  • Delta diameter between top of SMA and bottom of lowest renal artery
  • Atheroma or calcification involvement of neck
  • Presence of endoleak at completion of index operation
Results

- Ten patients met criteria and underwent salvage FEVAR for IA endoleak
- One patient had index repair in setting of ruptured abdominal aortic aneurysm, nine had prior elective EVAR
- Two patients demonstrated IA endoleaks on completion angiogram at index repair which were expected to resolve with time and reversal of heparinization
- Infrarenal neck lengths ranged from paravisceral up to 63mm
- Infrarenal neck diameters ranged from 21mm to 46mm
Conclusions

• Paravisceral/juxtarenal aneurysms, those with short proximal infrarenal necks, and larger proximal neck diameters are prone to failure with standard EVAR repair

• Data demonstrates need to stick with known anatomic parameters rather than testing limits of standard EVAR
• Reoperations and salvage procedures come at a cost with increased operative risk and increased complication rates
• The best operation is the best repair at the index procedure
Discussion

• Opportunity for improved recognition of patients who may be better served with FEVAR up front for repair of their abdominal aortic aneurysms, decreasing need for future salvage reoperations