Conduit choices for in-line caval reconstruction  
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Disclosures

• Scientific Consultant  
  – Veniti  
  – Cardinal Healthcare  
  – Tactile Medical  
  – Volcano

• Clinical Trial Investigator  
  – Tactile Medical, Veniti, Volcano

Call from surg onc room

“We kind of got into the cava – can you come give us a hand for a minute?”

How to reconstruct IVC?

• Primary repair  
• Patch closure  
  – Material  
• In line reconstruction  
  – Conduit choices

Primary repair

• Lacerations, injury to IVC not involving removal of significant section of wall  
• Probably OK if < 30% of wall involvement to primary repair  
  – Resultant lumen > 15 -18mm diameter  
• In general no more difficult to do patch closure, unless time of repair is critical
**Patch closure**

- Useful for tumor involvement requiring removal of up to 50% of circumference of IVC wall

- Materials
  - PTFE
  - Bovine pericardium
  - Femoral vein

**Complete IVC replacement**

**Replacement of the inferior vena cava for malignancy: An update**

Thomas C. Bower, MD, David M. Nagorney, MD, Kenneth J. Cherry, Jr, MD, Barbara J. Toomey, RN, John W. Hallett, MD, Jean M. Panetta, MD, and Peter Glatzlel, MD, Engleier. Hina

- JVS 2000;31:270
- 29 patients with IVC replacement for tumors
  - 2 primary
  - 27 secondary

**Bower: IVC replacement**

- Conduit
  - Large diameter externally supported PTFE
  - 14 mm or greater (n=28)
  - Panel vein graft using Femoral Vein in one

  - 2 early deaths, one intraop
  - 2 graft occlusions, patency rate about 90%

**Quinones-Baldrich results**

- Conduit in IVC replacement
  - Ringed PTFE
  - Smaller than IVC
  - 12-14 mm diameter
Other technical tips

• Avoid intraoperative systemic anticoagulation unless h/o DVT/PE
• Liberal local use of heparinized saline
• Attention to fill graft and Valsalva to avoid air embolus at unclamping
• Cover securely with retroperitoneal tissue/omentum
• IPC boots post-op

Q-B: Results

• Most common cause of graft stenosis or occlusion is tumor recurrence
• 5 Year patency: 80%
• 5 year survival: 45%
• Limb edema rare

Summary

• IVC reconstruction can successfully be performed for retroperitoneal tumors when needed
• Primary repair or patch useful for limited involvement
• External supported PTFE most common recommended material for complete replacement