Vascular Techniques for Oncologic Resections

- Vascular surgeons have been increasingly involved in the performance of oncologic reconstructions due to the case complexity or intraoperative complications.
- Endovascular and open surgical techniques may be necessary to address specific issues and concerns.

Vascular Reconstructions

- Vascular reconstructions may be necessary on an elective or emergent fashion when tumor resections are performed.
- Venous reconstructions are more common than arterial reconstructions.
- The IVC and the PV/SMV segment are increasingly considered for reconstruction at the time of tumor resection.

Inferior Vena Cava Reconstructions

Frequent tumor resections
- Nephrectomy
- Retroperitoneal tumor
- Lymph node resection
- Pancreatoduodenectomy

Options for IVC Repair
- Primary repair
- Patch repair
- Replacement
- Ligation

Disclosure Statement

- Consultant
  - Cook
  - Medtronic
  - Trivascular
  - Bolton Medical
  - W. L. Gore
Inferior Vena Cava Reconstructions

**Primary and patch repairs**
- Best options if possible
- Associated with partial, smaller resections
- High patency rates
- Vein, prosthetic, bovine pericardium

From Vladov NN et al., *World J Gastrointest Surg* 2012

**IVC Replacement**
- Associated with extensive resections
- Variable patency rates
- Venous conduit – IJ, SFV
- Prosthetic – ringed PTFE

From Quinones-Baldrich et al., *J Vasc Surg* 2012

Inferior Vena Cava Reconstructions

**UCLA Experience**
- 1990 – 2011, 47 patients (21 women, mean age 56 years)
- 77% sarcomas
- Repairs – 11 primary, 9 patches, 27 PTFE replacements
- Results:
  - Mean f/u of 3.5 years (1.5 to 216 months)
  - Graft Patency at 5 years
    - IMR - Imaging
    - 92% - Clinical
  - No mortality, 10.6% morbidity

Quinones-Baldrich et al., *J Vasc Surg* 2012

Portal Vein / SMV Reconstructions

**50 year old male with cancer of neck of pancreas**

PV/SMV involved but clear above and below tumor

SMA, hepatic artery were not involved

Strasberg SM et al., *J Gastrointest Surg* 2012

Portal Vein / SMV Reconstructions

**Whipple at the splenic artery**

Pancreatic tumors in the neck of the pancreas

Strasberg SM et al., *J Gastrointest Surg* 2012
Portal Vein / SMV Reconstructions

Options for PV / SMV Reconstructions

- Primary repair
  - Transverse closure of defect
  - End-to-end anastomosis
- Patch repair
  - GSV or SFV
- Replacement
  - SFV or IJV

Strasberg SM et al., J Gastrointest Surg 2012

Portal Vein / SMV Reconstructions

Primary end to end repair

SFV Interposition Graft

Vascular Reconstructions

Conclusion:
- Endovascular techniques can be very helpful as vascular surgeons are increasingly involved in the management of complex oncologic reconstructions.
- Open surgical reconstructions have been successfully and increasingly performed for the management of these patients.