Patient Selection: In-line Caval Reconstruction

William J. Quinones-Baldrich MD
Professor of Surgery
Director UCLA Aortic Center
UCLA Medical Center
Los Angeles, California

Disclosures
• Speaker / consultant
  W.L. Gore
  Endologix
  Medtronic

Potential Indications for Vena Cava Reconstruction
• Venous Hypertension due to occlusion
  Superior Vena Cava Syndrome
  Malignancy, Mediastinitis, Thrombotic
  Multiple hemodialysis access interventions
  Inferior Vena Cava
  Thrombotic, RP Fibrosis
• Retroperitoneal Tumor
  Primary IVC – rarely LE edema
  Secondary - Sarcoma with IVC invasion
  Other tumors – benign or malignant
• Tumor thrombus – Renal, leiomyomatosis

Operative Treatment of Refractory Superior Vena Cava Syndrome
1998

Potential Indications for Vena Cava Reconstruction
• Venous Hypertension due to occlusion - 2014
  Endovascular approach –
  • In-line reconstruction
  • Lower mortality
  • Lower Morbidity
  • Re-intervention possible
Retroperitoneal Tumors and the IVC

• Limited or no invasion
  - Benign tumors
  - Leiomyomatosis – tumor thrombus
  - Renal cell carcinoma – tumor thrombus

• Invasive tumors
  - Carcinoma (Violation of tissue planes)
    - Adrenal – functional or non-functional
    - GI – Duodenal
    - Neuroendocrine
  - Sarcoma (Preservation of most tissue planes)
    - Primary IVC or Aorta
    - Secondary – Lei, Lipo, Rahbdo, etc
  - Benign – locally invasive – teratoma

Treatment involves complete resection with adjuvant Radiation and/or Chemotherapy

61 y/o with non-specific mild abdominal discomfort and no lower extremity symptoms

Resect; Ligate or replace IVC?

IVC Ligation associated with severe LE edema in at least 50% of patients
• Renal vein ligation – risk of renal failure (Right > Left)
Retroperitoneal Tumors
• Inferior Vena Cava often involved requiring partial or circumferential resection
• Treatment involves complete resection with adjuvant Radiation and/or Chemotherapy
  • IVC Ligation associated with severe LE edema in at least 50% patients
  • Renal vein ligation - risk of renal failure (Left < Right)

52 y/o male with mild lower extremity edema
Primary repair – less than 50% narrowing
Patch repair – autogenous if contaminated field
Internal jugular vein preferred over LE vein

61 y/o with non-specific mild abdominal discomfort and no lower extremity symptoms
Reconstruct IVC
Collaterals removed during tumor resection

3 y/o with Teratoma over aorta and IVC
Age is not a factor
Internal jugular vein patch

Patient Selection for In-line Caval Reconstruction
Conclusions
• Endovascular in-line vena cava reconstruction most appropriate for thrombosis/occlusion
• In-line vena cava reconstruction is indicated after partial or circumferential resection for en bloc tumor excision