Indications for IVC Filters- Are They Being Observed?

John E. Rectenwald, MD, MS.
Chief and Associate Professor
Division of Vascular & Endovascular Surgery

2017 VEITHsymposium
44th Annual Symposium on Vascular and Endovascular Issues

Pulmonary Embolism
• Approximately 900,000 PE occur annually
• 200,000-300,000 deaths per year
• Mortality rate of approximately 30%, untreated
• Anticoagulation remains the cornerstone of treatment
• Not all patients can be safely anticoagulated
• IVC filters have been the mainstay of treatment in this significant group of patients

Indications for IVC Filter Placement
• Broadly classified into 3 categories
  – Absolute (classic) indications
  – Relative (accepted) indications
  – Extended (prophylaxis) indications
• Quality of data to support use decreases from absolute to extended indications
  – Associated controversy increases

Indications for IVC Filter Placement: DVT or PE, and…

Absolute (“Classic”) Indications:
• Failure of anticoagulation
• Significant bleeding complication related to anticoagulation
• Contraindications to anticoagulation
  ➢ CNS hemorrhage/Mets
  ➢ Overt GI bleeding
  ➢ Massive hemoptysis
  ➢ Thrombocytopenia <20K
  ➢ Solid organ trauma
Indications for IVC Filter Placement: 
**DVT or PE, and…**

**Accepted “Relative” Indications:**
- Massive PE with residual DVT in patient at risk for further PE
- Poor cardiopulmonary reserve:
  - Severe pulmonary hypertension
  - Right heart failure
- Free floating iliocaval thrombus*
- Patients with ataxia or significant fall risk

**Indications for IVC Filter Placement:**
(NO requirement for DVT or PE)

**“Extended” Indications: (Prophylactic filters)**
- Trauma patients without DVT/PE
  - Closed head injury
  - Spinal cord injury
  - Long bone or pelvic fracture
- Preoperative patients with multiple risk factors for DVT/PE
- High-risk immobilized patients

**Recent Trends in IVC Filter Placement**

- In 2006, 50% of all IVC filters were placed prophylactically
- In 2012, nearly 75% of all IVC filters placed in patients without underlying VTE

**“Appropriateness of Indication”**

- 1 out of 8 patients has IVC Filter placed for acute DVT
- Panel of experts using guidelines assessed appropriateness indication for filter placement
  - 51% appropriate
  - 26% inappropriate
  - 23% panel was divided

**Current Trends in IVC Filter Placement**

Reddy et al. JAMA Intern Med. 2017;177(9):1373-4
Conclusions

- Classic and relative indications for IVC filter placement are supported by what data that exists.
- The use of IVC filters for prophylactic prevention of PE is markedly increasing.
  - There are little data to support prophylactic use of IVC filters.
  - What data there are is controversial.
- A significant number of IVC filters in the US are placed inappropriately.
- The numbers of IVC filters placed in the US appears to be decreasing.