Indications for IVC Filters- Are They Being Observed?

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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

No Disclosures
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

**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

Current Trends in IVC Filter Placement

- Over 230,000 IVC filters per year placed in the US
- 46% of filters placed in 2000 were for prophylaxis (34% for CI to anticoagulation)

**“Appropriateness of Indication”**

<table>
<thead>
<tr>
<th>Indication</th>
<th>% of Filter Placed in US</th>
<th>Literature</th>
<th>Panel Individual</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nolvadex increased bleeding with antiplatelet therapy</td>
<td>17</td>
<td>3</td>
<td>3</td>
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</tr>
<tr>
<td>Severe left ventricular failure with antiplatelet therapy</td>
<td>12</td>
<td>2</td>
<td>2</td>
<td>2</td>
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<tr>
<td>Right ventricular failure with antiplatelet therapy</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Increased risk of life-threatening bleeding with anticoagulation</td>
<td>8</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>High risk for severe acute MI despite aspirin therapy</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
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<tr>
<td>Platelet dysfunction or abnormal coagulation</td>
<td>4</td>
<td>1</td>
<td>1</td>
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</tr>
</tbody>
</table>

- 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

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