Surveillance, anticoagulation or filter in calf DVT

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DVT: Still a significant problem

Major Morbidity and Mortality

Calf DVT

30% of distal vein thrombi will propagate proximally without anticoagulation

25% will develop chronic edema and symptoms of venous insufficiency

Background

No Consensus for Treatment

4 RCT’s

CHEST Supplement

Antithrombotic Therapy for VTE Disease
Antithrombotic Therapy and Prevention of Thrombosis, 9th ed; American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Anticoagulation for cancer and symptomatic patients
Low risk, unprovoked?
IVCF?

Management controversial

No consensus exists for use of anticoagulation for calf vein thrombosis
Michael J. Prandoni*, J. Gallus, Rettenmaier* and Ann Miron
Management controversial

No consensus exists for use of anticoagulation for calf vein thrombosis

48.5% of surveyed physicians anticoagulate for calf vein thrombosis
46% use IVC filters when anticoagulation is contraindicated!

Objective

To compare the outcomes of IVC filter placement versus conservative treatment in patients with distal vein thrombi

Hypothesis

Distal vein thrombi are associated with low risk of propagation and pulmonary embolism and can be managed conservatively

Methods

Retrospective Chart Review
April 2002 – January 2014

Inclusion: patients with isolated distal vein thrombi
Exclusion criteria: history of PE, pre-existing IVC filter, or concomitant proximal DVT

Patients were stratified by treatment:
IVC filter placement
Conservative therapy

Endpoints:
- Pulmonary embolism
- Propagation of DVT
- Complications of therapy (e.g. bleeding, IVC filter complications)
Statistical Analysis

- Univariate and multivariate analysis
- Propensity score matching
- Kaplan-Meier analysis to compare rates of DVT propagation and PE

Results

<table>
<thead>
<tr>
<th>Demographics</th>
<th>IVC Filter N (%)</th>
<th>Conservative N (%)</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean)</td>
<td>65 (±15)</td>
<td>61 (±16)</td>
<td>0.004</td>
</tr>
<tr>
<td>Male</td>
<td>161 (56%)</td>
<td>188 (52%)</td>
<td>0.27</td>
</tr>
<tr>
<td>Inpatient</td>
<td>186 (65%)</td>
<td>170 (47%)</td>
<td>0.45</td>
</tr>
<tr>
<td>Symptoms</td>
<td>85 (30%)</td>
<td>106 (29%)</td>
<td>0.17</td>
</tr>
<tr>
<td>Paralyzed</td>
<td>17 (6%)</td>
<td>12 (3%)</td>
<td>0.12</td>
</tr>
<tr>
<td>Smoking</td>
<td>116 (40%)</td>
<td>152 (42%)</td>
<td>0.21</td>
</tr>
<tr>
<td>Recent Surgery</td>
<td>173 (60%)</td>
<td>165 (47%)</td>
<td>0.10</td>
</tr>
<tr>
<td>Prior VTE</td>
<td>160 (56%)</td>
<td>58 (16%)</td>
<td>0.0001</td>
</tr>
<tr>
<td>Malignancy</td>
<td>142 (49%)</td>
<td>95 (26%)</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
Results
Location of Distal Vein Thrombi

Muscular (Gastroc/Soleal)  Tibial  Both

10
20
30
40
50
%  

IVC Filter  Conservative

Results
Pulmonary Embolism Rates

PE Rates

0  0.5  1  1.5  2  2.5  3  3.5  
%

IVC Filter  Conservative

Results
Conservative Group Stratified by Anticoagulation Therapy

0
5
10
15
20
25
30
35
%

DVT Propagation  PE

None  Prophylactic  Therapeutic

Results
Contraindication to Anticoagulation

Other: Anemia, Thrombocytopenia, Unreliable Patient, Bleeding NOS

28%  Recent Surgery 28%
30%
12%
15%
18%

Results
Post-operative Complications – IVC Filters, 10% Complication Rate

Perforation  Tilting  Migration

Summary
Distal vein thrombi have low rates of pulmonary embolism of 2-3% regardless of IVC Filter insertion.
IVC Filter insertion associated with a 10% complication rate.
Therapeutic anticoagulation has a lower rate of DVT propagation.
Conclusion

Distal vein thrombi are associated with thromboembolic events, which is reduced with therapeutic anticoagulation.

When anticoagulation is contraindicated, continued surveillance should be considered, given the low risk of PE and complication risks of IVC Filter insertion.

Limitations

• Retrospective nature
• “Immortal bias”