Pre-operative Determinants Of Venous Stenting Occlusion

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Disclosure

Speaker name: Ahmed Khairy

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

- I do not have any potential conflict of interest
Recommend the use of venous angioplasty and self-expanding metallic stents for treatment of chronic or uncovered ilio-caval compressive or obstructive lesions by any of the thrombus removal strategies (GRADE 1C)

Safe and effective treatment with excellent long-term results, and therefore improving quality of life
Objective:

To identify and assess the pre-operative factors that may affect the long term patency of venous stenting.

Methodology:

- Data of all patients with VOO between 2008 and 2015 was retrospectively collected from (PACS system and Philips client programs in Radiology Department of Galway University Hospital)
- Inclusion Criteria:
  - Acute or chronic iliofemoral DVT
  - Nonthrombotic iliac lesion (NIVL)
  - VOO due to malignant compression
- Exclusion Criteria Patients without adequate follow up
<table>
<thead>
<tr>
<th>Demographics</th>
<th>Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of patients</td>
<td>149</td>
</tr>
<tr>
<td>Mean age (range)</td>
<td>55 (18-86)</td>
</tr>
<tr>
<td>Female gender</td>
<td>(95/149, 65%)</td>
</tr>
<tr>
<td>Left Side</td>
<td>(108/149, 73%)</td>
</tr>
<tr>
<td>Acute IFDVT:</td>
<td></td>
</tr>
<tr>
<td>With malignancy</td>
<td>(80/149, 54%)</td>
</tr>
<tr>
<td>Without malignancy</td>
<td>(52, 35%)</td>
</tr>
<tr>
<td></td>
<td>(28, 19%)</td>
</tr>
<tr>
<td>Post-thrombotic syndrome</td>
<td>(29/149, 20%)</td>
</tr>
<tr>
<td>NIVL</td>
<td>(40/149, 27%)</td>
</tr>
</tbody>
</table>
All patients had preoperative Color flow Doppler
  Access site
  Dominant inflow vessels

After 2010 all patients had a preoperative CTV
  Underlying Aetology
  Site and nature of the lesion
  Inflow vessels (state, number)
  Preoperative PE
Technique

- **Access:**
  - Acute cases
    - US guided ipsilateral Popliteal V
  - Chronic lesions
    - CFV (>70%), or FV, or right internal Jugular vein

- Pharmaco-mechanical thrombectomy+/-CDT for all acute DVTs was performed

- The underlying lesion was addressed and a variety of stents were employed

- All patients fully anti-coagulated before, during and after procedure
Postoperative protocol

- Overnight intermittent pneumatic compression boots

- Well fitted thigh-high class stockings (grade 2) for 6 months

- Oral anticoagulation for 6 months:
  - Target INR 2-3
  - LMWH for underlying malignancy

- Those with recurrent DVT or known thrombophilia were prescribed life-long anticoagulation
Follow up

- Postoperative Color Doppler US – Day 1/2
  To assess venous stent patency and exclude acute rethrombosis

- Long term follow up
  - Clinical
  - Color flow Doppler US
  - CTV if become symptomatic

- CT scans in oncology patients were used to assess the stent as part of their follow up
Preoperative factors that may affect the long term patency rates of venous stenting
Male vs. female gender

(p = 0.046)

BETTER PATENCY IN MEN
Idiopathic thrombosis Vs. provoked DVT

(p = 0,042)

Better patency in idiopathic thrombosis
Acute thrombosis vs. Chronic lesions

(p = 0.039)

Not surprisingly Chronic Lesions did worse than Acute thrombosis........
Increasing risk factors for DVT
($p = 0.016$)

Worse patency with increasing the risk for acute DVT

Zero or one risk factor

Multiple factors
(Increased risk)
Underlying malignancy

Cancer vs. non cancer (p = 0.03)

Surprisingly no much worse with malignancy .........
Disease of the common femoral vein

\( p = 0.024 \)

Much better patency with normal common femoral vein.............
Preoperative factors did not influence the long term patency ($p>0.05$)

- Age
- Side
- IVC thrombosis
- Pre-existing IVC filter
- Pre-operative pulmonary embolism
Case Presentation

Female patient
34 years old
History of old DVT(twice)

O/E:
Left LL Swelling
Left LL varicosities

Direct CTV was done
Conclusion

*A proper pre-operative assessment is essential, Why?*

- Better preoperative planning
- Better intra-operative decisions
- Avoid the need for lifelong anti-coagulation in low risk cases
- Create patient tailored follow-up protocols
Thank you

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