Real World Experience with the AngioVac Device

30 consecutive cases of ilio-caval thrombosis

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

- [x] 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
Disclosures

• Consultant
  – Angiodynamics
Background

• Large Venous Thrombus is a challenging clinical problem

• Percutaneous and Open techniques have been used for decades, however technical challenges remain
Background

• Large volume percutaneous thrombectomy has historically been associated with significant blood loss

• Open surgery can carry a high complication rate during intra-cardiac and intra-abdominal thrombectomy
What is the AngioVac

- The AngioVac Cannula is indicated for use as a venous drainage cannula and for removal of fresh, soft thrombi or emboli during
What is in the “AngioVac kit”
Procedure Description

- 26 Fr AngioVac Cannula
- 18 Fr Return Cannula
- Connect the suction and reinfusion cannulas to the circuit
Going On Pump

• ACT of > 300
• Inflate the angiovac balloon
• Start the centrifugal pump
  – Volume flow of 2500-3000 cc/minute
• Advance the angiovac cannula towards the thrombus
• Utilize other techniques to embolize the thrombus into the suction cannula
Closure

- Return Blood back to the patient
- Flush the Filter
- Remove the cannula and sheaths
- Pressure and a suture
2017 Literature Search

PubMed search for "angiovac".

Search results:
Items: 1 to 20 of 32

1. Factors Associated with Successful Thrombus Extraction with the AngioVac Device: An Institutional Experience.
   D'Ayala M, Worku B, Gulkarov I, Sista A, Horowitz J, Salemi A.
   PMID: 27521826

   Moriarty JM, Al-Hakim R, Bansal A, Park JK.
   PMID: 27282218

   PMID: 27145051

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“Large” Case Series

- **12 cases**
  - 4 IVC/Iliac 5 PE 4 RA
  - Full/Partial Success in 75%

- **16 Cases**
  - 10 IVC/Iliac 6 PE
  - Full/Partial Success 87.5%
  - 2 deaths in hospital (12.5%)

- **7 Cases**
  - All RA
  - 86% Success

- **5 Cases**
  - All PE
  - 40% success
  - 80% died in hospital
Sentara Norfolk Experience

• 30 Cases Ilio-Caval Thrombosis
  – 18Female 12 Male
  – 25(83%) during the initial admission
  – 7(23.3%) within the first 24 hours
  – Admission to intervention was 3±3 days.
  – Symptoms to intervention was 10±7 days.
  – 26 Patients had an IVC filter
Pre-operative Considerations

– 14 (46.7%) received catheter-directed thrombolysis.
  • 7 (50%) suboptimal thrombus clearance
  • 7 (50%) had cessation due to bleeding or bleeding risks
Results

• Procedure time 125±51 minutes.
• IVC filter was removed in 11 of 26 patients (42%).
• Clinical Success 29 patients
• Angiovac as standalone 7 patients
• Average post-op stay 5±4 days.
• Average follow-up was 7.2±6.1 months
# Intraoperative Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>n</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Post-Op Transfusions</td>
<td>5</td>
<td>16.7%</td>
</tr>
<tr>
<td>Access Site Complications</td>
<td>5</td>
<td>16.7%</td>
</tr>
<tr>
<td>Pulmonary Emboli</td>
<td>1</td>
<td>3.3%</td>
</tr>
<tr>
<td>Intra-Op Transfusions</td>
<td>7</td>
<td>23%</td>
</tr>
</tbody>
</table>
Case #1

- 52 year old woman with a history of DVT Had a Trapese filter placed. Anticoagulation stopped
- Presented with 3 days of abdominal pain and bilateral swollen legs
- Venous Duplex demonstrated IVC and In Filter Thrombosis and Bilateral LE thrombus to popliteal Veins
Conclusions

• AngioVac is will have an important role in large volume thrombus removal
• Limited role in Pulmonary Embolism
• Limitations include:
  – Start up costs
  – Limited experience with venous bypass
  – Lack of comfort with large sheath devices
• More data is needed
  – RAPID Registry
    • Registry of AngioVac Procedure In Detail
    • Enrollment started in 2015.
Thank You
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