Hemodialysis Vascular Access Salvage with mechanical debulking device

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Disclosure

Speaker name:
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I have the following potential conflicts of interest to report:

☒ Consulting for Straub Medical, Medtronic, Cardinal health
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
<table>
<thead>
<tr>
<th>Failing AV fistula</th>
<th>Occluded AV fistula</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal, ↓ or absent Thrill</td>
<td>NO Thrill</td>
</tr>
<tr>
<td>Low blood flow, recirculation, high blood pressure</td>
<td>NO Pulsatility</td>
</tr>
</tbody>
</table>
| Same access salvage | Need for new access???
| **Culprit lesion Treatment** | **Thrombolysis/Thrombectomy** |
| Immediate usage !!! | **Culprit lesion Treatment** |
|                     | Delayed usage ???   |
Frequent Lesion Sites

Native X Prosthetic AV dialysis fistula
Occluded Access Recanalization

Δ T – Best Results:

• 10 days – National Venous Registry
• 14 days – ATTRACT Trial
• 21 days – CaVenT Trial

Kearon et al. Chest. 2008;133:454S-545S
Segal et al. Ann Interv Med. 2007;146:211-222
Occluded Access Recanalization

- $\Delta T = 21$ days
- Techniques: Pulse Spray Therapy
  - Mechanical Thrombectomy
- Goal: Thrombus Debunking
  - Culprit lesion treatment
Advantages and Disadvantages

"Pulse Spray"
- Fibrinolytic drugs
- High bleeding risk
- Long lasting and several procedures
- UCI admission
- Late hospital discharge
- Low cost device

Mechanical Debulking
- NO fibrinolytic drugs
- Lower bleeding risk
- Fast and Single Procedure
- Day clinic
- Early hospital discharge
- Higher cost device
Mechanical Thrombectomy Devices

**Efficacy**

Early Patency: 91 to 73%

90 days Patency: 90 to 21%

Mid term Patency (12mo): 75 to 40%

Karatepe at al. Int Surg. 2015;100(7-8):1249-1254
Vesely TM et al. JVIR.1999;10(9):1195-205
Shatsky JB et al. JVIR. 2005;16(12):1605-11
Rotarex

Single Center Prospective Study

Midterm Results Following Percutaneous Rotational Thrombectomy for Acute Thrombotic Occlusions of Prosthetic Arteriovenous Access Grafts.

Karatepe C¹, Aldemir M², Çınar B³, Önalan A⁴, İşsever H⁵, Goksel OS⁴.

- 2011 – 2013
- 30 procedures
- 22 patients
- 94% Technical Success
- 12 mo primary patency: 75%
- Failure Predictive Factors:
  Female Gender
  Diabetes Mellitus
  Occlusion ΔT
Aspirex

Single Center Retrospective Study

2010-2014
27 procedures - 19 patients
13 native and 14 prosthetic
100% channel of thrombus removed + high pressure balloon
81.5% Clinical Success
Primary patency 30/90/480 days = 53.6%/44.3%/33%
Major Complication: 0
Access Site

- Remote Arterial (femoral)
- Proximal Arterial (brachial)

- Retrograde Venous
- Antegrad Venous
- Apex Technique
- Double venous puncture
AV Fistula Thrombectomy Technique

- Mechanical effect: fragmentation and aspiration
- Device: Rotarex 6F or 8F
- Access: 6F or 8F Sheath
- Endoluminal crossing: 0.014”, 0.018” or 0.035” hydrophilic glide wire
- Venous outflow first, then the proximal AV anastomosis
- Short movements – proximal to distal
- Attention to collecting bag
- Attention to heating – allow system irrigation
- Attention to friction signs: touch and sound
- Heparinization
- Culprit lesion treatment
Rotarex Debulking Technique
Way to do it!!!
Mechanical Hemostasis
Thank you!!!

“Go big or go home”
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