Long segment plication for AV fistulae threatened by diffuse aneurysmal degeneration: Short-term results

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Disclosures

• None
Overview

- A substantial number of patients with autologous arteriovenous fistulae (AVF) develop diffuse aneurysmal degeneration.

- These aneurysms can interfere with cannulation attempts, make decannulation more difficult, and increase the risk of thrombosis.

- These AVF are thus often deemed unsalvageable.
Introduction

- These fistulae can be repaired by means of long-segment plication.

Purpose of this Study

• We believe that aggressive repair in these patients can be performed safely with acceptable short-term AVF salvage rates, and that this will lead to overall improved fistula patency and ipsilateral arm use.
Methods

• July 2012 – January 2014
• Referred for combination of local pain, arm edema, cannulation difficulties, recurrent thrombosis, dysfunction during dialysis, or extreme tortuousity
• Time range for AVF creation to consultation ranged from 3 months to 11 years.
• All patients were followed by clinical exam and duplex.
Operative Procedure

• Long segment plication over a 20Fr Bougie with or without segmental vein resection
  – Exposure of fistula
  – Proximal and distal control
  – Excision of redundant aneurysmal vein
  – Plication over 20Fr bougie
  – Creation of skin flap(s)
  – Primary closure of wound
Aneurysmal AVF
Arterial anastomosis (with small, separate saccular aneurysm)
Exposure of aneurysmal AVF

Resection and reanastomosis

20F bougie
Before & After
July 2012 – Jan 2014:

35 patients (71% male, 29% female)

Avg age 55

Age of AVF 3 months to 10 years

Minimum follow up of 30 days
# Perioperative Results

**N=35**

## 30 day Perioperative Complications

<table>
<thead>
<tr>
<th>Complication</th>
<th>Percentage</th>
<th>Count (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombosis</td>
<td>5.7%</td>
<td>2</td>
</tr>
<tr>
<td>Infection /Excision</td>
<td>5.7%</td>
<td>2</td>
</tr>
<tr>
<td>30 Day Death</td>
<td>2.8%</td>
<td>1</td>
</tr>
<tr>
<td>Steal</td>
<td>2.8%</td>
<td>1</td>
</tr>
</tbody>
</table>
Catheters, etc

- 21 patients required perioperative temporary access catheters
  - Of patients needing temporary access catheter, median time to first fistula use was 44 days.

- 20 patients underwent skin flap coverage of AVF, 15 patients had AVF left directly under incision
  - Both infections requiring fistula ligation occurred in non-flap group
Back to our Objectives?

• We have shown that aggressive repair in these patients can be performed safely with acceptable short-term AVF salvage rates.

• This will lead to overall improved fistula patency and ipsilateral arm use.
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Back to our Objectives?

• We’ve shown that aggressive repair in these patients can be performed safely with acceptable short-term AVF salvage rates.

• Will lead to overall improved fistula patency and ipsilateral arm use?
Conclusions

• What we know:
  • We can convert these tortuous “mega-fistulae” into nice, straight conduits with a relatively low complication rate, and about 90% short term salvage.
  • High patient satisfaction
  • High nephrologist satisfaction
Conclusions

• What we don’t know:
  • Who needs these and who doesn’t
    • When to intervene
    • On whom to intervene

• Longer term follow up and eventual prospective randomized trial!