Long-Term Results Of A-V Fistulas And Grafts

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BACKGROUND
• Dialysis is the life line of patients with end-stage renal failure.
• Hemodialysis can be done by constructing an a-v fistula, utilizing a graft or through a central venous catheter.
• Controversy as to the location of a-v fistula, size of adequate vein and priority of a-v fistula versus a-v graft exists among different societies.

AIMS
• To present a single center experience with A-V fistulas and A-V grafts.
• To compare their patency rates.
• To compare different surgical sites.
• To come up with preferences to allow better and longer utilization.

METHODS
• Collected all patients who underwent A-V fistula or A-V graft between the years 2008-2014.
• Included were patients who had a preoperative duplex scanning or those deemed to have good vessels on clinical exam.
• Arteries larger than 2.5 mm and veins larger than 3 mm were considered fit.
• Dialysis was performed 3 times per week.
• Follow up included check for: a thrill and distal pulse; non-increased venous pressure or visible collaterals; effective dialysis, no prolonged bleeding.
• Changes led to obtaining fistulogram resulting in endovascular or open repair.
RESULTS

• 503 patients- 32 excluded d/t primary failure (within 24 hrs)
• 471 patients
• Mean age 58 years (range 39-82).
  51% older than sixty years.
• 297 males (63%).
• 268 Diabetics (57%)

RESULTS

• Time to first dialysis and maturation of fistula was 6 weeks
  first use for graft, after 2 weeks.
• 11 patients with A-V fistula (2.8%) needed early
  intervention (prior to or after their first dialysis).
• In sharp contrast, NONE of the A-V grafts (74) needed
  early intervention.

RESULTS

<table>
<thead>
<tr>
<th>Complications</th>
<th>A-V fistula</th>
<th>A-V graft</th>
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</thead>
<tbody>
<tr>
<td>Reintervention</td>
<td>43 (11%)</td>
<td>41 (55%)</td>
</tr>
<tr>
<td></td>
<td>P&lt;0.05</td>
<td>ALL Late</td>
</tr>
<tr>
<td>Infection</td>
<td>8 (2%)</td>
<td>6 (8%)</td>
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<tr>
<td></td>
<td>P&lt;0.05</td>
<td></td>
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<tr>
<td>Steal/Ischemia</td>
<td>4 (1%); too small</td>
<td>0 (0%)</td>
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<td></td>
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<tr>
<td>Pseudoaneurysm</td>
<td>25 (6%); P&lt;0.05 involves skin</td>
<td>2 (2.5%)</td>
</tr>
</tbody>
</table>

CENTRAL VEIN OCCLUSION
VENOUS ANEURYSMS

PRIMARY PATENCY: A-V fistula Vs. Graft

SECONDARY PATENCY: A-V fistula Vs. Graft

RESULTS per Surgical Site

- Comparing radio-cephalic fistula to brachio-cephalic fistula: No difference in maturation time 6 weeks +/- 10 days; p=0.74. As for primary patency there is a trend towards better patency for brachio-cephalic fistula after 6 months; 1 year and 2 years: 82%, 74%, 59% compared to 80%, 71%, 54%; p=0.058
- For patients with Diabetes Mellitus differences were statistically significant: brachio-cephalic fistula had a trend toward maturation time (p=0.09), needed less reintervention (p=0.04) and had a longer patency rate (p=0.02)
CONCLUSIONS

• A-V fistulas require a longer maturation time and have higher pseudoaneurysm formation rate, but better patency rates compared to A-V grafts.

• A-V grafts have a faster maturation time but more late interventions are required and infection is more common.

• Diabetic patients have better results with proximal A-V fistulas (brachio-cephalic).