Radial-Cephalic (Brescia-Cimino) Fistula

In the mid 1960s Drs. Cimino, Brescia and coworkers described the arteriovenous (AV) fistula, created by subcutaneous anastomosis of the cephalic vein and radial artery. This radial-cephalic direct wrist access is now the fistula of choice and is often referred to as “the gold standard” for hemodialysis access because its creation is associated with a low complication rate and excellent long-term patency for those patients who develop a mature access. An access should be placed at the wrist only after it has been verified that the radial artery is not the dominant conduit in the hand (Allen Test, Doppler Imaging).

ADVANTAGES
- Simple to create
- Preserves more proximal vessel for future access construction
- Lower incidence of steal
- Low rates of thrombosis or infection

DISADVANTAGES
- A high early failure rate (reported to be as high as 50% and more common in patients with diabetes mellitus, elderly, female and obese)
- A vein must dilate and the vein wall thicken (arterialize) over six to eight weeks before the fistula has matured and can be used for hemodialysis.

With an AV anastomosis, arterial pressure is transmitted to the vein, which dilates and thickens (arterializes) over time. The side-to-end autogenous radial-cephalic direct wrist access is the most common configuration. The distal portion of the vein is tied to minimize venous hypertension risk associated with a side-to-side anastomosis. This, in turn, can lead to edema and discomfort in the hand (see Ischemic Steal Syndrome VA-54-tn). The end-to-end anastomosis also provides better flow rates than a side-to-side anastomosis.

<table>
<thead>
<tr>
<th>Choice</th>
<th>Traditional Nomenclature</th>
<th>New Nomenclature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Brescia-Cimino fistula</td>
<td>Autogenous radial-cephalic direct wrist access</td>
</tr>
<tr>
<td></td>
<td>Snuffbox fistula</td>
<td>Autogenous post. radial branch-cephalic direct access</td>
</tr>
</tbody>
</table>

REFERENCES
3. www.kidneyaltas.com Chapter 5.2 Arteriovenous Dialysis Access Evaluation and Placement,