

# UNRECOGNIZED VASCULAR VARIATION LEADING TO FAILURE OF ARTERIOVENOUS FISTULA: *Case Report and Impact of Vascular Planning*

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## Background

Identification and evaluation of variations in arterial and venous arm anatomy is crucial to successful proximal arteriovenous fistula (AVF) creation.

Our aim was to show the the importance of preoperative vascular I mapping before choosing the best AVF according to the NFK-DOQUI guidelines.

## Methods

We describe a case of a successful arteriovenous graft (AVG) creation in a patient who was referral after previously two AVF and a AVG without vascular mapping. This case was selected among 239 patients between February 2011-January 2014.

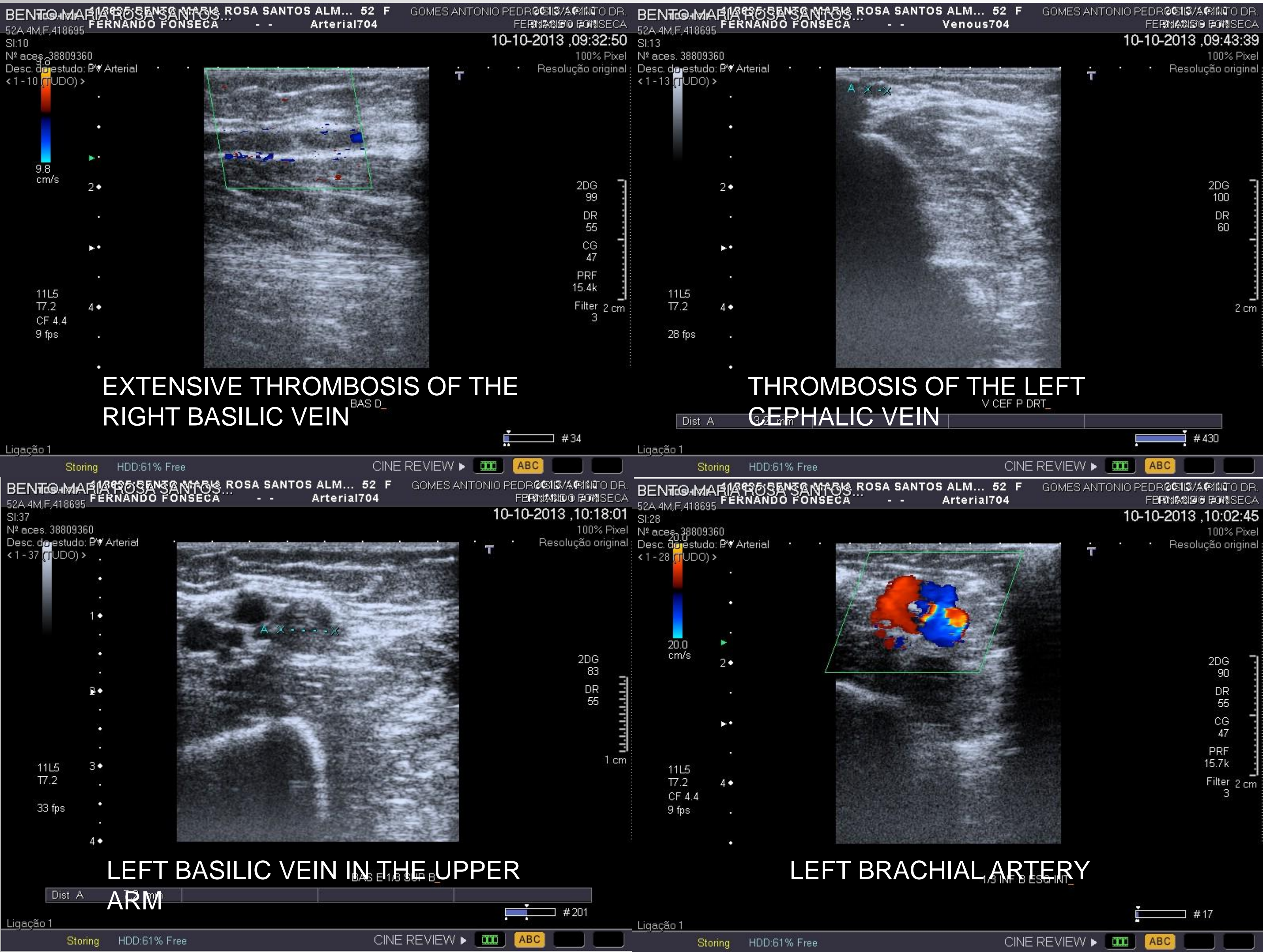


Figure 1. Venous and arterial mapping.

## CASE-REPORT

- 52 Y, caucasian woman
- CKD pre-dialysis after septic shock by pospartum complications 12 years ago.
- Referral from another hospital with a previous
  - right upper arm brachial-cephalic and a brachial-basilic AVF
  - left forearm radial-cephalic AVG were performed

but failed due to thrombosis.

Vascular mapping showed a right sinuous brachial artery with 4mm diameter and a 0,13l/min flow. The right basilic and cephalic veins couldn't be characterized due to the extensive thrombosis. The left radial artery had a 2mm diameter and a 0,01l/min flow and the cephalic vein was also thrombosed. Left brachial artery showed a 4mm diameter and a

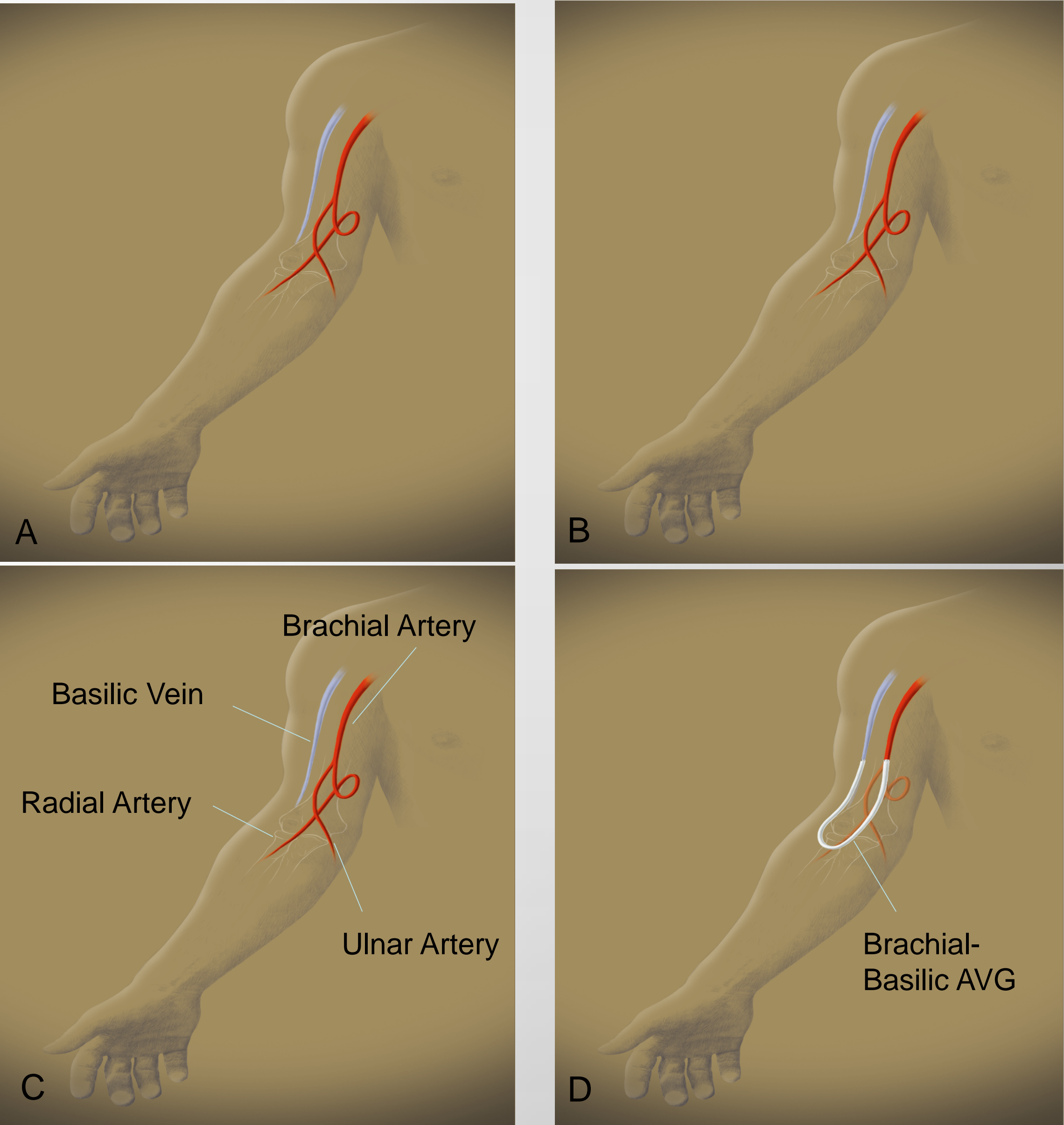


Figure 2. Schematic drawing of the usual and unusual anatomy. Common vascular anatomy (A). Usual high brachial artery bifurcation (B). **Our Patient** - Unusual high brachial artery bifurcation (C). Brachial-Basilic AVG successfully performed (D).

## Conclusions

According to the KDOQI guidelines, the radial-cephalic AVF at the wrist and brachial-cephalic AVF at the antecubital fossa are the first and second access choices being the brachio-basilic the third choice. AVG is indicated in absence of no suitable vein for AVF. This case highlights the importance of vascular mapping before surgery to avoid AVF failure and preservation of future access by choosing the most suitable vessels according to hemodynamic characteristics.