Endovascular ‘Banding’ with angioplasty of forearm arteries: A new approach to manage dialysis-associated steal syndrome

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Disclosure

Speaker name:

I have the following potential conflicts of interest to report:

☐ Consulting

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☒ I do not have any potential conflict of interest
Introduction

❑ The pathophysiologic mechanisms that govern dialysis-associated steal syndrome are complex and poorly understood.

❑ Two mechanisms are mainly offending:
  o The Steal from the Forearm Arteries (by retrograde flow from the high-resistance forearm arteries into the low-resistance arteriovenous access).
  o Distal arteriopathy (mainly result of vascular calcification and diabetes).
The problematic

- The majority of current surgical and endovascular interventions
  - surgical banding,
  - DRIL +++
  - RUDI
  - proximalization of fistula
  - endovascular MILLER banding

are intended to treat the problem of arterial steal

while the problem of distal occlusive arterial disease persists !!!
Our Strategy

- new approach to treat in the same time the two responsible mechanisms

- Purpose: maximizing the chances of Healing
Our technique: first step: endovascular “banding”

- Setting up a tourniquet at the level of the upper arm
- Then we perform of retrograde puncture of the humeral fistula, 6 cm above the anastomosis; we put a 5 French sheath.
Our technique: first step: endovascular “banding”

- A small cutaneous incision will allow performing a banding of the proximal part of the fistula by two silk knots (a modified MILLER procedure).

- We inflate a 4-5 mm balloon at the level of the incision.
Our technique: first step: endovascular “banding”

- At the same time, we check the flow in the fistula by Doppler ultrasound to obtain a flow between 800 and 1000 ml/min.

Reduction of the fistula diameter after banding
Our technique: second step: angioplasty of forearm arteries
Our technique: second step: angioplasty of forearm arteries

Balloon: 2-2.5 mm-in diameter and 80-120 mm in long
Our technique: second step: final result

Before

After

After
Our technique: second step: final result
Our technique: A second patient

- 43 year old women
- Diabetic
- Left Brachiocephalic arteriovenous venous (3 years)
- Hand pain, gangrene of the third finger
- DUS
- Angioscan: distal arteriopathy
Our technique: second patient procedure
Our technique: second patient procedure
Our technique: Another patient procedure: the banding
Our technique: second patient procedure: Distal angioplasty

Cubital angioplasty, Balloon: 2-80 mm
Our technique: second patient
procedure: final result
A third patient....

- Cubital stenosis
- Occlusion of the proximal of the radial artery
A third patient....

Good result after radial and cubital angioplasty
My last patient (61 Yom, left BC fistula)
My last patient

angioplasty of the ulnar artery ; 2,5*100 balloon
Summary ...

- The two last years
- 8 patients
- 7 patients: total relieve of symptomatology with healing of amputation stump
- A case of vascular access lost
- Allow treatment of both mechanisms
Merci
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