Arterial Steal Syndrome

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Arterial Steal
- Hypoperfusion to extremity, due to diversion of blood away from the distal arterial circulation.

Patients at risk
- Diabetics
- Elderly
- Patients with severe peripheral vascular disease
- Patients with multiple access attempts.

Steal and associated symptoms
- Hand pain (on and off dialysis)
- Discoloration
- Cold hand
- Numbness
- Hand ischemia

Conditions contributing to Steal
- Distal arteriopathy/Diabetes, calcification
- High flow AVF, “megafistula”
- Hypotension on dialysis/vasoconstriction in proximal arteries
- Proximal arterial stenotic lesions

CLASSIFICATION OF STEAL SYNDROME
- Stage 1 Retrograde diastolic flow without complaints
- Stage 2 Pain on exertion and or during hemodialysis
- Stage 3 Rest Pain
- Stage 4 Ulceration/necrosis/gangrene
Diagnosing Steal
- Arteriography – retrograde flow, arterial lesions.
- Pulse examination - Allen’s test
- Evaluate hand temp and color
- Pulseoximetry
- Physical examination done before access angioplasty.

Steal study
- Complete arterial study from aortic arch to the palmer arch

Aortic Arch

Proximal brachial arterial stenosis
- 70 yr old CKD Pt with diabetes and hypertension
- Severe hand weakness and pain
- Full arterial study
- 90% stenotic lesion
- Angioplastied with 6 mm balloon
- Restoring blood flow to distal arterial system.
Stenosis Distal Brachial Artery

- 62 year old woman
- Complaint of numbness in left hand
- Hx of DM, HTN, CVA, Recent declot
- 70% arterial lesion
Treatment options

- Treating diagnosed arterial lesions
- Banding high flow AVF
- DRIL procedure - Distal Revascularization with Interval Ligation
- RUDI procedure - Revision Using Distal Inflow
- Ligation of AVF