**SYSTOLIC BP <120**
HEART RATE < 60  
**BRACHIOCEPHALIC AVF with Peripheral Vascular Disease**

**EXAM!**
TEMPERATURE OF HAND/FEET  
PULSE EXAM ARM/HAND/FEET  
QUALITY OF PULSE ARM FEET  
BRUIT OVER ARTERY

**PULSE OXIMETER**
SaO2  
HEART RATE  
WAVE FORM  
VERY RARE  
LOOK AT UPSTROKE

**PACEMAKER!**
UPSTROKE!

2.5 mm  
plaque!  
reversal of flow!

Brachiocephalic AVF with Peripheral Vascular Disease  
surgical bypass?  
PREVIOUS HX OF ISCHEMIC HAND?  
EASY TO FIX!
**Artery Size**

**Good Anatomy! Good Physiology!**

**Tenting**

**BMI 54!**

**Easy To Fix!**

**BP 140/70**

**Artery = 6mm**

**HR 80!**

**Ischemic Ectopy!**

**BP 130/80**

**Artery = 6mm**

**HR = 50!**

**No Reversal Of Flow!**

**Graft**

**All Vessels Match!**

**Ischemia 2 Months**

**82 Years Old Pacemaker**

**Heart Rate 56**

**HR Increase To 70**

**3.5mm Artery**

**No Ischemia.**

**Steal Syndrome**

**Catheter**

**Flow Reversal Prove By Angiogram**
2 mm vein

WRONG OPERATION!
BRACHIAL-CEPHALIC FISTULA
THINK THIGH!

angioplasty induced ischemia

INFLOW STRicture
FLOW = 350 cc/min

PTA
FLOW = 300 cc/min

new inflow
artery size

FAILURE MODE - DISTAL ARTERIAL DISEASE
84 years old

failure mode = ischemic hand
PTA 4mm BALLOON

SAVE HAND AND SAVE FISTULA

FAILURE MODE - ISCHEMIC HAND
1 week after B-C FISTULA
3mm PTA Balloon

DRIL WILL NOT WORK!

HIGH FLOW ISCHEMIA
CFI = 1.8
Cephalic fistula
Adjust flow
Brachial artery
BP drop

CATHETER DAMAGE DATA BANK!
7 YEARS OF STUDY!
HOW I USE STENTS IN THE CENTRAL VEINS!

WE NEED CATHETERS!
BUT CATHETERS CAN SUCK!
DON'T DO STUPID STUFF!

STENT GRAFT
3 STENTS
STUFF WE LEAVE IN CENTRAL VEINS!
HERO DEVICE!

4 month catheter
ZONE 3
BRACHIOCEPHALIC VEIN!
PLAN NEXT ACCESS NOW!
LONG STENT BUYS LITTLE TIME!

CATHETER DAMAGE DATA BANK!
NO SVC!
ZONE 5!
LONG CATHETER SYNDROME!
NO IVC!

SURGICAL BYPASS!
PTA!
STENT!
NOTHING!
catheter 5 years ago for 6 weeks