Femoral Vein Angioplasty (Not Stents):
Must Look And Treat Popliteal Vein And Below
To Succeed Often

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Disclosures

• InterSocietal Accreditation Commission Vein Centers:
  – Board of Directors
• Merit Medical
  – Chief Medical Officer, Royalties
• BSX:
  – Speaker, Research Support
• BTG/EKOS:
  – Speaker, Research Support
• Cook Medical
  – Consultant, Research Support

Anatomic Considerations & PTS

Although we know that:
• More central occlusions: > ambulatory venous pressures
• More central occlusions: > chance of PTS
• Higher ambulatory pressures > severity of PTS

It doesn’t mean infrainguinal disease is benign
Indeed, axialization of the profunda is not always adequate

Infrainguinal Disease

Infrainguinal PTS can be devastating
If It’s Indicated….ABSOLUTELY needs to be treated

Popliteal Disease

Ilac-CFV occlusions can cause devastating PTS
Femoral Vein occlusions: Axialization may not always be adequate
Popliteal occlusions can cause severe calf PTS …main outflow from the calf
Venous Stents

- For iliofemoral chronic venous occlusion…
  *ABSOLUTELY needed to maintain patency*

However….

- Fem-pop chronic venous occlusions…
  *That’s a different ballgame altogether*

Concerning Femoral Stents

- My experience: THEY OCCLUDE!
- I Do NOT use “Fem-pop” venous stents
- No data on fem-pop stents for chronic DVT
- Little is known, Poorly studied

Why use stents……
When other non-stenting techniques work

How Can I Say That

**Technical success:**

A) Ability to cross occlusion: 120/122 98%
B) Ability to restore flow: 118/120 98%

Results: Clinical Success:

**Symptomatic Improvement**

- Mean follow-up 2 yrs 7 mo
- 104/122 limbs:
  - 97 (93%) reported significant improvement
  - 7 (7%) unchanged
  - 0 worse
  - 18 were lost to follow-up

**US Patency**

- 1 mo: 96%
- 3 mos: 92%
- 6 mos: 88%
- 12 mos: 75%
- 24 mos: 58%

Villalta Results

- N= 31 consecutive pts
  - Fem-pop ds
  - Preprocedure: 13.1
- Postprocedure: 1 month: 5.2
- 3 mos: 2.6
- 6 mos: 2.1
- 12 mos: 1.9

Our Protocol - ACCESS PTS

- Enoxaparin pre-procedure thru post x min 1 month
- Appropriate access
- Cross occlusion:
  - CTO cath’s – Navicross & stiff guidewire
  - Support system (Cook TriForce)
- PTA to appropriate size (iliac -14, fem 10, pop 6-8)
- USAT lysis @ 0.5 mg/hr overnight
- F/U w/ PTA or stenting (to lesser troch) as needed
- Discharged on Enoxaparin 1mg/kg BID x 1-3 mo & ECS then NOAC until ??
- Initiate exercise program 2-3 days post-op
Why Stent
Chronic “DVT”: Misnomer

- There is NO thrombus …… it consists of organized dense fibrotic tissue comprised of type I & III collagen

Comerota, A et al. JVS 2010 52, 243-247

Access Site Determination

If by Doppler US:

- Pop v. is normal
  - Pop access
- Pop v. diseased/occluded
  - Post Tibial

Example– 2 yo Fem-pop DVT

- 49 y o F prev. marathon runner
- Aug 2010-bike acc w/ brain trauma
- Extensive LUE DVT => M-T
- Jan 2011 iliac stenting, failed LE lytics – cort w/ PESI
- Villalta 7, unable to run (pain, swelling)
- April 2012 – Tx

F/U Intervention

2 yr F/U Doppler

- Villalta 7 → 3 states from “0 at baseline to 80% recovered”

12 mos F/u Clinical

- Ran marathon following October
- 2 yrs out with persistent DUS patency and improved QOL
Key to Long-term Patency

Establishing direct in-line flow
- from calf to thigh***
- Thigh to pelvis
- Pelvis to RA

- Reduce resistance/obstruction to flow
- Maintain good velocity: Need in-flow & out-flow

*** means MUST look at popliteal & tibials veins to ensure calf outflow & femoral inflow

Summary

- Chronic DVT CAN safely & successfully be treated
- No need for Fem-pop stenting to maintain patency
- Need to establish direct in-line flow ankle to RA
- This includes looking & treating popliteal & tibial disease
- Techniques currently used are safe & effective
- Data is needed (ACCESS PTS Study)
- We ABSOLUTELY can improve the QOL in pts suffering from chronic occlusive venous disease & PTS

Thank you