Why Flexed Knee Angiography Should Always Be Performed To Control All Popliteal Interventions Or Procedures

1. Forces acting on FEM-POP tract
2. Flexed knee patterns of POP artery
3. Is flexed knee study useful in POP-PTA?

1. Angiographic study on pts with PAD
2. Cadaver study
3. Rotational angiography study

Conclusions
• The popliteal artery is exposed to significant deformations during flexion of the knee joint
• The severity of calcification directly affects curvature, but not arterial length or twisting angles

Disclosure

Roberto Ferraresi, MD

I have the following potential conflicts of interest to report: consulting, travel reimbursement, teaching courses, training, proctoring:

Medtronic, Boston Scientific, Abbott, LimFlow, Terumo, Cook, Biotronik, Asahi, Shire, Kardia,
Conclusions

- Heterogeneous study designs that confound interpretation.
- Different physiologic settings: young/mature, with/without disease, and cadavers.
- Although this work has been valuable and significant, there are many limitations with the currently available data such that all we know about the SFA/PA environment is that we don't know.

1. The FEM-POP segment is subject to continuous and important mechanical forces that need to be carefully considered, as they weigh heavily on the outcome of endovascular treatments.
2. With regard to what to do to control these forces, the only thing that literature can tell us is: "I know I do not know".

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Standard AP projection: Extended knee
Latero-lateral projection: Flexed knee
Every popliteal artery is different depending on:
- Residual elastic properties
- Stiffness and calcification
- Extension of the disease

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Never flex the knee with a wire inside!

A stiff 0.018" wire is in and the vessel is abnormally straightened
No wire: "natural" atherosclerotic upper popliteal kinking
Patient data
- Male, 73 yy old
- Type 2 DM
- Toes gangrene

Flexed knee study

Extended knee: good result
Flexed knee: obstruction!

Stenting:
Self-expandible nitinol stent 5 x 30 mm

Final result
Stenting modified the geometry of POP artery in flexion.

**Patient data**
- Female, 74 years old
- Type 2 DM
- Rutherford 3, severe claudication
In our experience, the latero-lateral flexed knee study of popliteal artery is very useful in testing the acute result of popliteal artery angioplasty.