Prevention and Treatment of the Residual Stenosis and dissection of Popliteal Artery lesion after PTA

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Clinical and Anatomical Characteristics

(1) more than 70% of the patients with severe intermittent claudication suffer from femoral-popliteal artery disease.
(2) Because of the adductor canal, the second part of the femoral artery suffer the musculoaponeurotic compression, torsion, stretch, contraction et al.
(3) The flex and rotation of the knee-joint.
The subsection of femoral popliteal artery
（1）Flow-limited dissection: Generally, dissection can heal by itself, but when the dissection turns into flow-limited dissection (the blood-fluid pressure between the two sides of the dissection is over 10mmHg), proper prevention and management should be taken.

（2）When the active plaque or residual stenosis is over 50%, another surgical intervention is necessary, and prevention and management is also needed.
（1）make sure the guide wire pass the true lumen as far as possible

- The method to avoid the guide wire going subintima:

- Try to use soft straight-head and smooth guide wire combined with single-bend catheter. When putting the guide wire into the diseased segments under the guidance and control of the single-bend catheter, try not to make the guide wire become loop (micro-loop is feasible), or try to use straight catheter combining with straight-head guide wire.
• 4F catheter (or seeker and trailblazer) combining with micro-guide wire

• follow the blood flow direction

• keep the guid wire in the normal position in the process of operation all the time
(2) How to make the guide wire go back into the true lumen if it goes subintima?

(1) Find the position of the true lumen with CTA, and make the guide wire and catheter go back into the true lumen. Keep the loop as small as possible.
(2) Use small balloon to dilate the exit (try not to make the guide wire go beyond the block section of the artery when operating subintimal angioplasty)
(3) SAFARI (subintimal arterial flossing with antegrade-retrograde intervention)
(4) Special tools: Outback etc.
(5) the hardhead of guide wire.
Balloon Dilatation at the Junction
(3) Sequential balloon dilation (case 1)
(2) Sequential balloon dilation (case2)
（4）Double guide wire balloon (case1)
Double guide wire balloon
(4) Double guide wire balloon (case 2)
(5) Debulk technology (Turbohawk)
(5) High pressure and long time compression of the balloon
How to choose the stent
Subintimal angioplasty is unavoidable (when treating the long-segment artery lesion and severe calcified artery lesions for example), but try not to make the guide wire go beyond the block section of the artery, and try to reduce the using of subintimal angioplasty. Making the guide wire and catheter go back into the true lumen by all kinds of means is the crucial guarantee for the success of the operation.

(2) Sequential balloon dilation、Double guide wire balloon（cutting balloon），debulking technology is an effective method to decrease residual stenosis and flow-limiting dissection.
(3) For femoral popliteal artery disease, it is not advisable to implant stent across the knee joint. It is suggested that the balloon be used to dilate the diseased artery with more time and higher pressure. Stent is implanted only in necessity. For the artery disease near the knee joint, find the proper location when the knee is flexed and then implant the stent when it is extended. Stent with more flexibility is a good choice.
Thank For your attention!

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