

Treatment of Chronic Total Occlusion by Subintimal Recanalization

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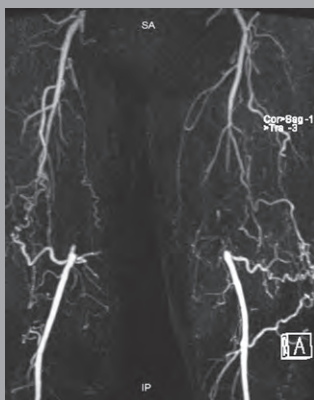


Figure 1



Figure 2a

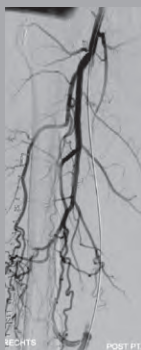


Figure 2b



Figure 2c

CLINICAL CHALLENGE

This case report presents a 56-year-old man with lifestyle limiting claudication and known bilateral superficial femoral artery (SFA) occlusions. He had Rutherford category 3 (Fontaine stage II b) symptoms on both sides. During treadmill test, the patient suffered from moderate cramps in his right calf after walking 38 meters and severe cramping after 59 meters. At further distance he complained of mild symptoms in his left calf. The ankle brachial index (ABI) was 0.68 on the right side and 0.61 on the left side. Patient had a known history of myocardial infarction followed by stent therapy of the left anterior descending and right coronary artery nine years ago, and later followed by repeat interventions. Furthermore, he suffered from hypertension, hypercholesterolemia and a non-insulin dependent diabetes mellitus. Patient is a former heavy smoker, having quit at the time of the cardiac event.

MR-Angiogram (Fig. 1) shows bilateral SFA occlusions. There were no stenoses in the iliac arteries and he had three-vessel run-off on both sides.

PROCEDURE

The right SFA occlusion was approached by a contralateral common femoral artery puncture and a 45 cm long 6 Fr sheath was introduced cross-over. Diagnostic angiogram (Fig. 2a – 2c) shows the 21 cm long SFA occlusion with a short stump at the origin. Recanalization was performed after 5,000 units of heparin were administered, using the roadmap technique. A subintimal course



Continued on back

PERFORMANCE
through experience



Figure 3a

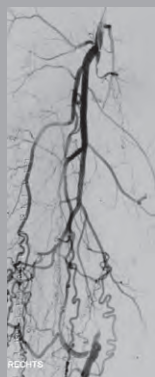


Figure 3b

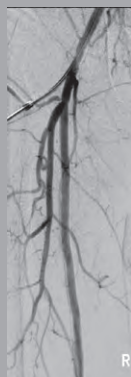


Figure 3c

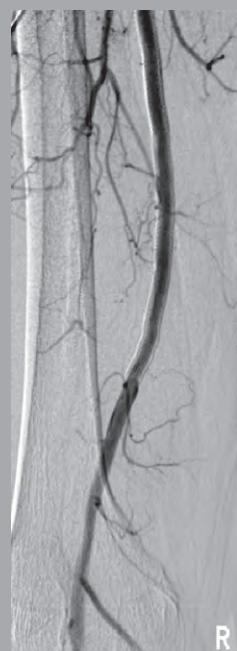


Figure 4

was created with an angled hydrophilic guide wire supported by a 4 Fr angulated guiding catheter. Spontaneous re-entry of the wire occurred immediately distal of the occlusion. After angiographic confirmation of true lumen re-entry, the recanalized SFA was dilated. Angiogram after dilation shows flow-limiting dissections and, therefore, the decision was made to implant a GORE® VIABAHN® Endoprosthesis with PROPATEN Bioactive Surface. To cover the total lesion length, two (7 mm x 150 mm) GORE® VIABAHN® Endoprostheses were necessary. Finally, post-dilation of the endoprostheses was performed. Completion angiograms (Fig. 3a – 3c) demonstrate patency of the SFA with a mild (less than 30%) residual stenosis at the level of adductor canal and unimpaired three-vessel run-off.

Due to patient medical history, prescribed lifelong medication was clopidogrel, 75 mg per day, and acetylsalicylic acid, 100 mg per day.

FOLLOW-UP

The repeat ABI after the procedure was 1.0. Patient was readmitted for SFA treatment on the left side two months later, and control angiogram of the right SFA (Fig. 4) shows a GORE® VIABAHN® Endoprosthesis without intimal hyperplasia or restenosis. At the four-month follow-up, the ABI on the right side was unchanged compared to the post-procedural measurement.

PHYSICIAN COMMENTS

The GORE® VIABAHN® Endoprosthesis with PROPATEN Bioactive Surface can be used to effectively recanalize long chronic occlusions of the SFA via subintimal implantation.



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