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PATHOLOGY OF FEMORO-POPLITEAL ATHEROSCLEROSIS: NO ROLE OF LIPID CORE?

Poster Contributions
Hall C
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Background: Autopsy studies have demonstrated differing characteristics of atherosclerosis depending on the arterial bed. Lipid core plaque (LCP) has been identified in the coronary circulation, but its presence in the superficial femoral artery (SFA) has not been evaluated invasively. Previous MRI studies suggested a differential LCP between eccentric and concentric lesions. We sought to assess the presence of LCP in SFA stenosis.

Methods: Twelve consecutive patients undergoing SFA revascularization were scanned by near infrared spectroscopy (NIRS) and intravascular ultrasound (IVUS) for the detection of LCP prior to intervention. LCP, and lipid core burden index (LCBI) were then co-registered to the area of most severe stenosis in the artery by IVUS. Two patients underwent atherectomy with pathologic analysis.

Results: In total, 12 patients underwent 18 scans of the SFA at sites of severe stenosis. The average length of vessel scanned was 78±31 mm with each scan. Of the 18 spectroscopic analyses, 16 (89%) had no LCP present at areas of stenosis. In both patients with atherectomy, no lipid core was identified on pathology. Of the 2 patients with LCP present at the site of stenosis, the mean LCBI was 297±86. Both plaques were negatively remodeled with circumferential calcification.

Conclusions: The data suggests, as previously reported by other modalities, that LCP does not constitute a major process in the negative remodeling of atherosclerosis in SFA stenosis.

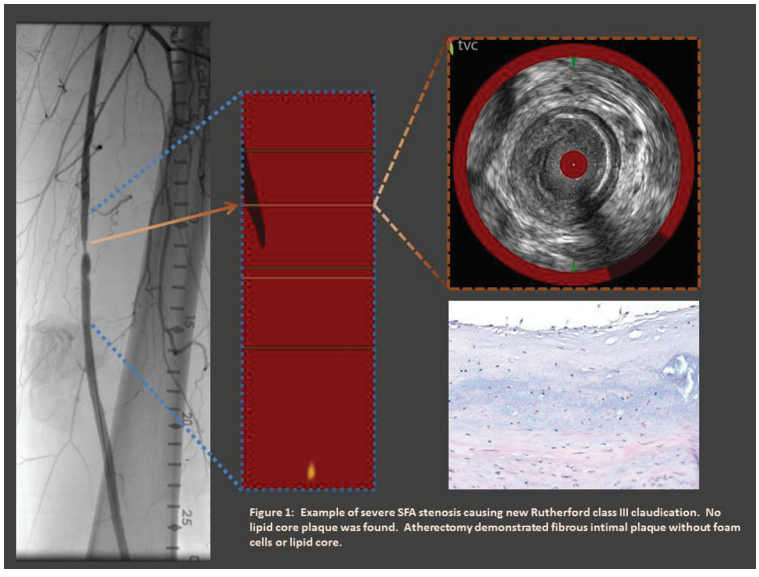

Figure 1: Example of severe SFA stenosis causing new Rutherford class III claudication. No lipid core plaque was found. Atherectomy demonstrated fibrous intimal plaque without foam cells or lipid core.