

and distant occupational exposure. This is also the only case found in the literature reporting more than one aneurysm in the ulnar artery. We hypothesize that the use of a rolling walker may have contributed to the progressive aneurysmal degeneration of his ulnar artery.

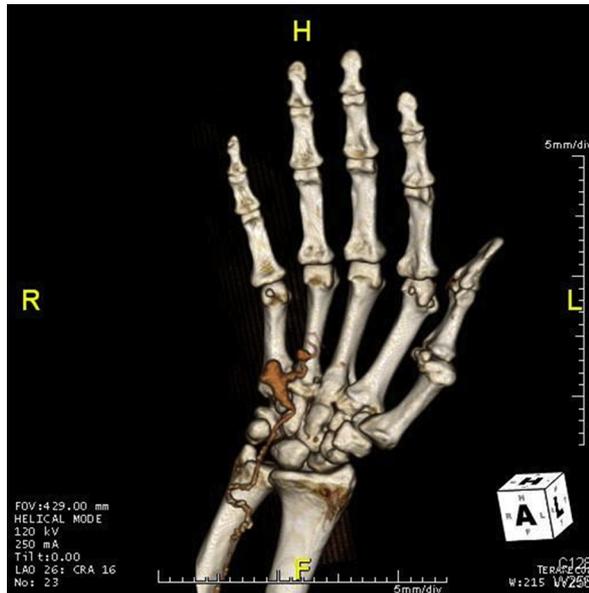


Fig.

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S4. Plenary Session 4

SS18.

Enhancing Neovascularization in Chronic Limb-Threatening Ischemia



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Objectives: The shear stress stimulus needed to switch on arteriogenesis, attenuated in chronic limb-threatening ischemia (CLI), can be restored with intermittent pneumatic compression (IPC). IPC also increases inflow of oxygenated nutritive blood, clears waste products of metabolism, and enhances the traffic of elements needed for neovascularization (NV). The circulating progenitor cell (CPC) population is also depressed in CLI. We hypothesize that NV will be promoted by IPC and CPC mobilization.

Methods: Seventy-four CLI patients (Fontaine III/IV) with failed interventions were treated with IPC, 3 hours daily. CPC mobilization with filgrastim (FG) was added in 12 patients not benefiting from IPC alone: 10 µg/kg subcutaneously every 3 days for a month. Effectors of NV were measured by cytometry and enzyme-linked immunosorbent assay.

Results: IPC alone (62 patients followed up a mean of 26 months): Amputation-free survival (AFS) was 73% at 3 years. The ankle-brachial index (ABI) did not increase significantly. After IPC use for 2 (n = 29): serum nitrite, a marker

of nitric oxide synthase activity, increased $32\% \pm 27\%$ ($P < .001$) and MCP-1 increased $20\% \pm 32\%$ ($P < .02$). At 30 days, nitrite increased $169\% \pm 158\%$ ($P < .001$). IPC+FG (12 patients followed up a mean of 17 months): AFS was 75% at 1 year. ABI increased from 0.30 ± 0.25 to 0.55 ± 0.19 ($P < .001$), with improved toe perfusion in eight of 12 limbs and angiographic evidence of NV. Serum levels of fibrin degradation products, VEGF, hepatocyte growth factor, PDGF-AA and-BB, angiopoietin 1, and MMP-9 more than tripled ($P < .001$). PlGF, insulin GF-1, and TNF also increased ($P < .001$), as did IL-6 ($P < .02$), and TGFb ($P < .02$). IPC reversed a $17\% \pm 7\%$ ($P < .02$) drop in MCP-1 caused by FG, highlighting a key benefit of IPC. The CD34+, VEGFR2+, and CD31+ cell counts increased $44\% \pm 42\%$, $68\% \pm 21\%$, and $12\% \pm 10\%$ respectively ($P < .02$).

Conclusions: Restoring the shear stress stimulus and improving the cellular environment promote NV, and may rival traditional intervention in CLI. Clinical measures were supported by biochemical data.

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SS19.

SVS Limb Stage (Wifi) and Patient Risk (PIII) Correlate With Midterm Outcomes in an Amputation Prevention Program



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Objectives: Clinical decision making and accurate outcomes comparisons in advanced limb ischemia require improved staging systems. The Society for Vascular Surgery Lower Extremity Threatened Limb Classification System (Wifi) is designed to stratify outcomes based on three major factors- wound, ischemia, and foot infection. The PREVENT III (PIII) risk score was designed to predict amputation-free survival (AFS) after revascularization. This study was designed to prospectively assess these risk stratification tools for predicting outcomes in an amputation prevention program.

Methods: A prospective, single-center analysis was done of consecutive patients admitted to a fully integrated vascular/podiatry service over a 17-month period. Patients were included in the study if they were hospitalized for treatment of a limb-threatening condition. Patients with acute limb ischemia were excluded. Upon admission, all patients were staged using the Wifi and PIII scoring systems. These patients were then followed up after hospitalization (median 166 days) to determine limb and overall survival outcomes.

Results: A total of 178 limbs (145 patients) were stratified by Wifi stage (1%-13%, 2%-28%, 3%-24%, 4%-28%, 5%-3%, and unstaged, 4%) and PIII (45% low, 42% moderate, and 13% high risk). Diabetes and end-stage renal disease (ESRD) increased with Wifi stage ($P = .006$ and $P = .004$). Median length of stay was 12 days (Wifi stage 4, 18 days; $P = .02$). Thirty-day events included 3% mortality, 8% major adverse cardiac events, and 21% readmission. Among 123 limbs that underwent revascularization, 114 had infrainguinal reconstructions (IR). Revascularization