

PERIPHERAL FLOW DYNAMICS AFTER FEMORAL ARTERY
CATHETERIZATION USING COMPUTER ASSISTED ADMITTANCE
PLETHYSMOGRAPHY. Lloyd A. Marks, Jeffrey A. Brinker,

Kenneth G. Zahka, Langford Kidd, Anthony F. Cutilletta. The
Johns Hopkins University, School of Medicine & The Johns
Hopkins Hospital, Department of Pediatrics, Baltimore.

Femoral artery catheterization (FAC) may be expected to produce changes in peripheral blood flow dynamics. We recently developed a computer assisted admittance plethysmograph (CAAP) to compute forearm and calf pulse volume (V), peak net inflow (F), and pulse transit time (PT), i.e. QRS-peak net inflow. Bilateral calf plethysmograms were obtained in 14 males (60±6y) undergoing coronary angiography. When compared to healthy younger normals (n=8, 26±4y), these patients had reduced baseline values of V(39.8%, p<.005), F(39.2%, p<.005), and PT(10.5%, p<.005). Within the first hour after FAC there were increases in V(25.5%, p<.025) and F(29.0%, p<.025) in the non-catheterized leg, but no significant changes in the catheterized leg. This suggests that acute increases in V and F induced by contrast were limited by localized arterial spasm and/or thrombosis. All values returned to baseline on the day after FAC. Two children (4, 10y) undergoing FAC showed greater transient lateralizing differences in V and F than the adults, suggesting that spasm and/or thrombosis may play a greater role in the smaller vessels of children. These data demonstrate that the CAAP is sensitive to altered flow dynamics associated with both the chronic changes of age and the acute changes related to FAC.

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