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PRESENTATION PREFERENCE (Check one)

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HEMODYNAMIC AND METRIC ASYMMETRY OF PAIRED BIFURCATING CAPILLARIES. H.N.Mayrovitz and J.Moore Miami Heart Institute, Miami Beach, FL 33140

In contrast to the arrangement of capillaries (CAPS) in skeletal muscle, many CAPS in the skin microvasculature, as seen in the ear of the hairless mouse, are present as pairs, originating from a common arteriolar site and converging to a common venule site. The loops thus formed provide a unique chance to study the features of paired CAPS subject to identical arteriolar-venular pressure differences. Measurements of capillary length (L), diameter (D) and blood velocity (V) were made in such loops with the aim of determining the basal parameter values and to characterize the degree of similarity between paired CAPS. Overall mean values ± sem, obtained from 20 loops in 10 mice were for L, 161 ± 6 um; for D, 4.7 ± 0.2 um; and for V, 198 ± 22 um/s. These are similar to values in other preparations. Symmetry between paired CAPS was assesed by comparing the ratio of smaller to larger quantities for measured (L,D,V) and calculated parameters (Q = blood flow, H = Hydraulic Hinderance). With the subscript 1 denoting the smaller value in the pair, the results are as follows.

L1/L2	D1/D2	V1/V2	Q1/Q2	H1/H2
0.84±0.03	0.83±0.03	0.64±0.05	0.57±0.05	0.52±0.06

These results demonstrate the presence of significant asymmetry between adjacent paired capillaries especially with regard to hemodynamic parameters.

Supported by American Heart Association, Florida Affiliate.

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