Microaneurysms in the Diabetic Human Heart

Ari Balofsky
Department of Medicine B, Sheba Medical Center, Tel Hashomer, Israel

**KEY WORDS:** microaneurysms, diabetic heart

_Diabetes mellitus often leads to microvascular disease in the body, including thickening of the capillary basement membrane and capillary microaneurysms in the retina and glomerulus. These microaneurysms are saccular and fusiform expansions of capillaries, arterioles, or venules. They have been reported in the retina and glomerulus, but do they also occur in the heart? In a study by Factor et al. [1], the hearts of six insulin-dependent diabetic patients and eight controls were perfused with microfil, a silicone-rubber compound, and prepared for histologic examination. Three of the six diabetic patients were found to have typical microaneurysms in the heart, as seen in retinal vessels. Two of them had occlusive (>75%) coronary artery disease, and the third had juvenile-onset diabetes mellitus with severe nodular glomerulosclerosis and retinopathy. None of the eight control hearts were found to have microaneurysms, although they had varying degrees of coronary artery occlusion [1]. In another study, 13 diabetic human hearts and 5 non-diabetic controls were analyzed using scanning electron microscopy. Microaneurysms were found in 11 of 13 diabetic hearts, and capillary microaneurysms in all diabetic hearts. No microaneurysms were found in any of the control hearts [2]. These findings show that although not often described, microaneurysms do occur in the hearts of diabetic patients._

_Corresponding author:_
A. Balofsky
Dept. of Medicine B, Sheba Medical Center, Tel Hashomer 52621, Israel
e-mail: abalofsky@gmail.com

**References**