THE MORPHOLOGY OF THE LYMPHATICS OF THE CORONARY ARTERIES IN THE DOG

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ABSTRACT

On the supposition that pericoronary lymphatics play an important role in the efflux of interstitial fluid from the blood vessel wall, we examined the morphology of pericoronary arterial lymphatics in the dog. After ligation of the principal epicardial drainage lymphatics, after ligation of the left anterior descending coronary artery, after induced pericoronary inflammation and after instillation of India Ink into the pericardial sac using light, dissecting, and electron microscopy. The findings were compared with non-operated (control) dogs.

Lymphatic drainage of the coronary arteries is via adventitial lymphatics, which do not penetrate to the media and via periadventitial lymphatics consisting of a subepicardial lymphatic plexus overlying the coronary arteries. The smaller arterioles in the ventricular muscle have many more accompanying lymphatics than do epicardial coronary arteries. In the latter arteries, prelymphatic channels formed by collagen fibers in the media likely transport interstitial fluid to the adventitial and periadventitial lymphatics. Arterial contraction also likely plays a role in propulsion of coronary arterial interstitial fluid towards adventitial lymphatics.