

BOOK REVIEW**CARDIAC LYMPH CIRCULATION
AND CARDIAC DISORDERS***F. Solti and H. Jellinek**Akadémiai Kiadó, Budapest (1989)**178 pages, including index.**Many black and white illustrations*

Solti and Jellinek, two distinguished Hungarian investigators who have been major contributors to studies of the lymphatics of the mammalian heart, have done a fine job of summarizing their personal thinking about the relationships between cardiac lymph flow and cardiac disorders. Their book is based to a great extent on their own research work, is thought provocative, is interesting, and merits our attention as being from men of important experience. It is not a large book and is relatively easy to read, though the translation is sometimes awkward.

The early chapters are well organized and deal with the anatomy and physiology of the cardiac lymphatics, and the effects of overloading and obstructing the coronary lymphatic system in animals. The illustrations are generally excellent, though some of the legends are deficient in defining the time-duration from intervention to the obtaining of the specimen. Throughout the book, the authors make commitments to opinions that are presented as unconfirmed facts. Examples include oversimplification of some anatomical descriptions. In dealing with aspects of treatment of lymphedematous states, the authors too readily accept the beneficial therapeutic effects of "benzopyrene and hyase" [hyaluronidase]. There are certain important statements that are

not well documented, as for example, that cardiac lymph flow in man is about 9.0 ml per hour. The authors quote Guyton concerning negative pressures in interstitial spaces and too readily conclude that the same is true for heart muscle.

Some of the most convincing presentations concerning the relationship between the coronary lymphatic system and cardiac disease relate to the authors' own work on coronary artery histologic changes with cardiac lymphatic obstruction. They summarize their previously reported work on histologic changes with cardiac lymphatic obstruction in dogs. This information is important and should be stimulating to other investigators. They emphasize the marked early and late changes due to cardiac lymphatic obstruction that they find in the coronary arterial walls both of epicardial and intramural vessels and in the myocardium itself, and they claim a major role for the cardiac lymphatics in the genesis of coronary atherosclerosis. Further, they mobilize arguments for the role of the lymphatics both in predisposing to myocardial infarction and infarct extension, and to the healing process after myocardial infarction. The prejudice of this reviewer is that the evidence for the latter is much more convincing than for the former. The authors firmly state that the lymph circulation is of vital importance in nourishing and maintaining the metabolism of the coronary vessel wall. Though some of us strongly agree with them, we must also accept that the proof for this opinion is not yet with us. It is stated that the removal of protein from

the myocardial interstitial space is almost wholly by the coronary lymphatic system, but there is evidence that the coronary venous system plays an important role in transporting protein back to the main circulation. They propose that there is active and remarkable regeneration of cardiac lymphatics, but the evidence cited for lymphatic regeneration is based on studies of cutaneous lymphatics in animals. They strongly support the Drinker concept that protein stasis in tissues leads to fibrosis, a concept that is generally accepted, but still unproved.

The authors define an entity of "lymphatic cardiomyopathy" due to impairment of cardiac lymph drainage, and relate to it significant electrocardiographic contour changes and "lymphogenous arrhythmias." They dismiss the objections that others have had, including this reviewer, to the problems of taking and

interpreting serial electrocardiograms in dogs.

Though there are frequent generalizations in this book that are weakly supported, and though the authors present certain viewpoints as fact rather than opinion, the book is definitely of interest to those of us who are convinced that the lymphatics of the heart are important in health and in various disease states. The translation is sometimes wanting, but the summary of the work of the authors is well worth reading. Particularly valuable is Jellinek's work on changes in the coronary arterial walls. All in all, this small volume, often quite speculative, is one that cardiac lymphologists will enjoy perusing.

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