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# 1986 YEAR BOOK OF

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## CARDIOLOGY®

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HARVEY  
KIRKENDALL  
LAKS  
RESNEKOV  
ROSENTHAL  
SONNENBLICK

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1986  
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**Year Book Medical Publishers, Inc.**  
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## Journals Represented

Acta Medica Scandinavica  
American Heart Journal  
American Journal of Cardiology  
American Journal of Epidemiology  
American Journal of Medicine  
American Journal of Obstetrics and Gynecology  
American Journal of Physiology  
American Journal of Public Health  
Annals of Neurology  
Annals of Surgery  
Annals of Thoracic Surgery  
Archives of Disease in Childhood  
Archives of Internal Medicine  
Arthritis and Rheumatism  
British Heart Journal  
British Medical Journal  
Chest  
Circulation  
Circulation Research  
Clinical Endocrinology  
Clinical Science  
Deutsche Medizinische Wochenschrift  
European Journal of Respiratory Diseases  
Fortschritte auf dem Gebiete der Rontgenstrahlen und der Nuklear Medizin,  
Erganzungsband  
Hypertension  
International Journal of Cardiology  
Indian Heart Journal  
Journal of the American College of Cardiology  
Journal of the American Geriatrics Society  
Journal of the American Medical Association  
Journal of the Applied Physiology: Respiratory, Environmental  
and Exercise Physiology  
Journal of Cardiac Rehabilitation  
Journal of Cardiovascular Surgery  
Journal of Clinical Endocrinology & Metabolism  
Journal of Clinical Investigation  
Journal of Clinical Pathology  
Journal of Hypertension  
Journal of Neurology, Neurosurgery and Psychiatry  
Journal of Pediatrics  
Journal of Physiology  
Journal of Thoracic and Cardiovascular Surgery  
Journal of Vascular Surgery  
Lancet  
Mayo Clinic Proceedings  
Nature  
Nephron  
New England Journal of Medicine  
New Zealand Medical Journal  
Pediatrics

Pfluger's Archiv: European Journal of Physiology  
Quarterly Journal of Medicine  
Science  
Seminars in Perinatology  
South African Medical Journal  
Stroke  
Surgery  
Texas Heart Institute Journal  
Transplantation  
Wiener Klinische Wochenschrift  
World Journal of Surgery

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## Publisher's Preface

Publication of the 1986 YEAR BOOK OF CARDIOLOGY marks the end of an outstanding era of YEAR BOOK editorship by W. Proctor Harvey, M.D., Walter M. Kirkendall, M.D., Edmund H. Sonnenblick, M.D., and Leon Resnekov, M.D., F.R.C.P. During Dr. Harvey's 26 years of editorship, Dr. Kirkendall's 15 years, Dr. Sonnenblick's 13 years, and Dr. Resnekov's 2 years, the volume's readers have been treated to perceptive commentary of the highest caliber. While the editorship by Hillel Laks, M.D., and Amnon Rosenthal, M.D., has spanned only 1 year, their literature selections and editorial commentary have matched the standards set for past YEAR BOOKS. We extend our deepest appreciation for the service provided by all of the editors and for their support and enthusiasm for the YEAR BOOK.

In the preface to the inaugural YEAR BOOK edition published in 1961, Dr. Harvey and his colleagues wrote, "Perhaps this volume can stand as evidence of another step inserted in the step staircase of scientific advancement." On publication of the 1986 edition, we applaud Dr. Harvey, his colleagues through the years, and the current Editors for the many steps they have inserted on that staircase. We have been enriched by the opportunity to work with such outstanding individuals. All will be missed by the staff of Year Book Medical Publishers, Inc.

Succeeding this distinguished group beginning with the 1987 edition will be Robert C. Schlant, M.D., Director of the Division of Cardiology at the Emory University School of Medicine, who will serve as Editor-in-Chief for a team of associate editors, all of whom will cover the field of cardiology as comprehensively and authoritatively as their predecessors have. While we welcome Dr. Schlant and his associate editors, we wish to extend our sincere thanks and appreciation to Drs. Harvey, Kirkendall, Sonnenblick, Resnekov, Laks, and Rosenthal for their years of excellent service.





# 1 Normal and Altered Cardiovascular Function

## Heart Failure

### **Tachycardia Induced Myocardial Dysfunction: A Reversible Phenomenon?**

Christopher J. McLaren, Bernard J. Gersh, Declan D. Sugrue, Stephen C. Hammill, James B. Seward, and David R. Holmes, Jr. (Mayo Clinic and Found.)

Br. Heart J. 53:323-327, March 1985

1-1

Four patients were encountered with chronic or frequent episodes of supraventricular tachycardia that resulted in severely impaired left ventricular (LV) function. Electrophysiologic studies showed reentrant supraventricular tachycardia using an accessory atrioventricular connection. Serial studies of LV function by echocardiography before and after control of the tachycardia showed varying degrees of reversibility of ventricular dysfunction. Three patients ultimately were well clinically, and the fourth was improving when last evaluated. Endomyocardial biopsy specimens in two cases showed only nonspecific histologic changes, including interstitial fibrosis and edema and focal degenerative change.

Reversible impairment of myocardial cellular function appeared to be related to supraventricular tachycardia in these patients. A mild increase in diastolic dimension can persist despite normal cardiac function at rest and during exercise. Two of the four patients were young infants; the immature left ventricle may be especially vulnerable to the demands of rapid tachycardia. Chronic or frequent episodes of supraventricular tachycardia can adversely affect LV function to a significant degree, and chronic ventricular dysfunction is a possibility. Prompt treatment is required in the presence of tachyarrhythmia and systemic desaturation of arterial oxygen. Further study is needed to identify the mechanisms of tachycardia-induced LV dysfunction.

► In dogs under experimental conditions, rapid tachycardia can result in persistent reductions in ventricular function that are associated with a decrease in total myocardial energy stores (Coleman, H. N., et al.: *Am. Heart J.* 81:790-798, 1971). That LV failure can be produced by persistent tachycardia is supported by the present study and the articles it refers to. It is also possible that the tachycardia that occurs when heart failure is present for other reasons may further amplify the process, and control of such tachycardia may be one of the beneficial effects that  $\beta$  blockers have had in the treatment of congestive cardiomyopathy. Administering drugs that can lower the heart rate without pro-