

## The YEAR BOOK of

# **Cardiology**

1980

Edited by

W. PROCTOR HARVEY, M.D.
WALTER M. KIRKENDALL, M.D.
JOHN W. KIRKLIN, M.D.
ALEXANDER S. NADAS, M.D.
LEON RESNEKOV, M.D.
EDMUND H. SONNENBLICK, M.D.

#### Copyright © August, 1980 by YEAR BOOK MEDICAL PUBLISHERS, INC.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

Printed in U.S.A.

Library of Congress Catalog Card Number: 62-6930 International Standard Book Number: 0-8151-4172-6



## 1980 YEAR BOOK OF CARDIOLOGY

#### THE 1980 YEAR BOOKS

The YEAR BOOK series provides in condensed form the essence of the best of the recent international medical literature. The material is selected by distinguished editors who critically review more than 500,000 journal articles each year.

Anesthesia: Drs. Eckenhoff, Bart, Brunner, Holley and Linde.

Cancer: Drs. Clark, Cumley and Hickey.

Cardiology: Drs. Harvey, Kirkendall, Kirklin, Nadas, Sonnenblick and Resnekov.

Dentistry: Drs. Hale, Hazen, Moyers, Redig, Robinson and Silverman.

Dermatology: Drs. Dobson and Thiers.

Diagnostic Radiology: Drs. Whitehouse, Bookstein, Gabrielsen, Holt, Martel, Silver and Thornbury.

Drug Therapy: Drs. Hollister, Capizzi and Shand.

Endocrinology: Drs. Schwartz and Ryan.

Family Practice: Dr. Rakel.

Medicine: Drs. Rogers, Des Prez, Cline, Braunwald, Greenberger, Bondy and

Epstein.

Neurology and Neurosurgery: Drs. De Jong and Sugar.

Nuclear Medicine: Dr. Quinn.

Obstetrics and Gynecology: Drs. Pitkin and Zlatnik.

Ophthalmology: Dr. Hughes.

Orthopedic Surgery: Dr. Coventry.

Otolaryngology: Drs. Strong and Paparella.

Pathology and Clinical Pathology: Drs. Carone and Conn.

Pediatrics: Drs. Oski and Stockman.

Plastic and Reconstructive Surgery: Drs. McCoy, Brauer, Dingman,

Hanna, Haynes and Hoehn.

Psychiatry and Applied Mental Health: Drs. Romano, Freedman,

Friedhoff, Kolb, Lourie and Nemiah.

Sports Medicine: Drs. Krakauer, Marshall, Quigley, Shephard and Torg.

Col. Anderson and Mr. George.

Surgery: Drs. Schwartz, Najarian, Peacock, Shires, Silen and Spencer.

Urology: Drs. Gillenwater and Howards.

# **Table of Contents**

December, 1979.		
Current Literature Quiz		9
Normal and Altered Cardiovascular Function edited by Edmund H. Sonnenblick, M.D. Professor of Medicine and Director, Divisi of Cardiology, The Albert Einstein College	on	
Medicine, New York		15
Myocardial Physiology		15
Ventricular Function		19
Myocardial Failure		41
Pharmacology		49
Coronary Physiology of Ischemia		58
of Pediatrics at the Children's Hospital, Harvard Medical School, and Chief, Card Department, Children's Hospital Medical	iolog	(y
		71
Center, Boston		71
Pharmacology		74
Surgery		81
Echocardiography		92
Clinical Syndromes		104
Miscellaneous		110
Heart Disease in Adults: The Myocardium, Endocardium and Pericardium, edited W. PROCTOR HARVEY, M.D., Professor of Medicine, Georgetown University School of Medicine; Director, Division of Cardiology	of	
Georgetown University Hospital		117

The material covered in this volume represents literature reviewed up to

Aortic Valve Disease	117
	120
Aortic Insufficiency	124
Echocardiography	125
Mitral Valve Disease and Prolapse	129
Congenital Heart Disease	136
Congenital Heart Disease	139
Infective Endocarditis	140
Myocardial and Pericardial Disease	143
	158
	161
The Coronary Arteries and Coronary Heart Disease, edited by LEON RESNEKOV, M.D., F.R.C.P., Professor of Medicine, Joint Director,	
Section of Cardiology, University	
	175
1	175
	179
	207
Miscellaneous	229
The Pulmonary Circulation, edited by Leon Resnekov, M.D	235
Cardiac Surgery, edited by John W. Kirklin, M.D., Professor and Chairman, Department of Surger School of Medicine and the Medical Center, University of Alabama in Birmingham; Surgeon-in-Chief, University of	y,
Alabama Hospital	243
Surgery for Congenital Heart Disease	243
Valvar and Other Acquired Heart Disease	259
Surgery for Ischemic Heart Disease	279
Support Systems during Cardiac Surgery	303
Hypertension, edited by Walter M. Kirkendall, M.D., Professor of Internal Medicine and Director of the Hypertension Section, University of Terms Medical School at Houston	, 315

Epidemiology and Detection				315
Experimental Observations				320
Pathophysiology				337
Secondary Hypertension	•			350
Treatment				
Kidney Disease				378
Hypertension and Pregnancy	•	•		379
<b>Answers to Current Literature Quiz</b>				385

TABLE OF CONTENTS



## 1980 YEAR BOOK OF CARDIOLOGY

#### THE 1980 YEAR BOOKS

The YEAR BOOK series provides in condensed form the essence of the best of the recent international medical literature. The material is selected by distinguished editors who critically review more than 500,000 journal articles each year.

Anesthesia: Drs. Eckenhoff, Bart, Brunner, Holley and Linde.

Cancer: Drs. Clark, Cumley and Hickey.

Cardiology: Drs. Harvey, Kirkendall, Kirklin, Nadas, Sonnenblick and Resnekov.

Dentistry: Drs. Hale, Hazen, Moyers, Redig, Robinson and Silverman.

Dermatology: Drs. Dobson and Thiers.

Diagnostic Radiology: Drs. Whitehouse, Bookstein, Gabrielsen, Holt, Martel, Silver and Thornbury.

Drug Therapy: Drs. Hollister, Capizzi and Shand.

Endocrinology: Drs. Schwartz and Ryan.

Family Practice: Dr. Rakel.

Medicine: Drs. Rogers, Des Prez, Cline, Braunwald, Greenberger, Bondy and

Epstein.

Neurology and Neurosurgery: Drs. De Jong and Sugar.

Nuclear Medicine: Dr. Quinn.

Obstetrics and Gynecology: Drs. Pitkin and Zlatnik.

Ophthalmology: Dr. Hughes.

Orthopedic Surgery: Dr. Coventry.

Otolaryngology: Drs. Strong and Paparella.

Pathology and Clinical Pathology: Drs. Carone and Conn.

Pediatrics: Drs. Oski and Stockman.

Plastic and Reconstructive Surgery: Drs. McCoy, Brauer, Dingman, Hanna, Haynes and Hoehn.

Psychiatry and Applied Mental Health: Drs. Romano, Freedman, Friedhoff, Kolb, Lourie and Nemiah.

Sports Medicine: Drs. Krakauer, Marshall, Quigley, Shephard and Torg, Col. Anderson and Mr. George.

Surgery: Drs. Schwartz, Najarian, Peacock, Shires, Silen and Spencer.

Urology: Drs. Gillenwater and Howards.

### The YEAR BOOK of

# **Cardiology**

1980

Edited by

W. PROCTOR HARVEY, M.D.
WALTER M. KIRKENDALL, M.D.
JOHN W. KIRKLIN, M.D.
ALEXANDER S. NADAS, M.D.
LEON RESNEKOV, M.D.
EDMUND H. SONNENBLICK, M.D.

YEAR BOOK MEDICAL PUBLISHERS, INC. CHICAGO • LONDON

#### Copyright © August, 1980 by YEAR BOOK MEDICAL PUBLISHERS, INC.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without prior written permission from the publisher.

#### Printed in U.S.A.

Library of Congress Catalog Card Number: 62-6930 International Standard Book Number: 0-8151-4172-6

# **Table of Contents**

December, 1979.	
Current Literature Quiz	9
Normal and Altered Cardiovascular Function, edited by Edmund H. Sonnenblick, M.D. Professor of Medicine and Director, Division of Cardiology, The Albert Einstein College of Medicine, New York	15
Myocardial Physiology	15
Ventricular Function	19
Myocardial Failure	41
Pharmacology	49
Coronary Physiology of Ischemia	58
of Pediatrics at the Children's Hospital, Harvard Medical School, and Chief, Cardiolog Department, Children's Hospital Medical	
Center, Boston	71
Morphology	71
Pharmacology	74
Surgery	81
Echocardiography	92 104
Miscellaneous	
	110
Heart Disease in Adults: The Myocardium, Endocardium and Pericardium, edited by W. PROCTOR HARVEY, M.D., Professor of Medicine, Georgetown University School of	

The material covered in this volume represents literature reviewed up to

Aortic Valve Disease	117
Cardiomyopathy	120
Aortic Insufficiency	124
Echocardiography	125
Mitral Valve Disease and Prolapse	129
Congenital Heart Disease	136
Congenital Heart Disease	139
Infective Endocarditis	140
Myocardial and Pericardial Disease	143
Coronary Artery Disease	158
Pacemakers and Electrophysiology	161
The Coronary Arteries and Coronary Heart Disease, edited by Leon Resnekov, M.D., F.R.C.P., Professor of Medicine, Joint Director, Section of Cardiology, University	
of Chicago	175
Epidemiologic Studies	175
Clinical Studies	179
	207
Miscellaneous	229
The Pulmonary Circulation, edited by Leon Resnekov, M.D	235
Cardiac Surgery, edited by John W. Kirklin, M.D., Professor and Chairman, Department of Surger School of Medicine and the Medical Center, University of Alabama in Birmingham; Surgeon-in-Chief, University of	
Alabama Hospital	243
Surgery for Congenital Heart Disease	243
	259
Surgery for Ischemic Heart Disease Support Systems during Cardiac Surgery	279 303
Hypertension, edited by Walter M. Kirkendall, M.D., Professor of Internal Medicine and Director of the Hypertension Section, University	

TABLE OF CONTENTS									7		
	Epidemiology and Detection						,.				315
	Experimental Observations		,	/ <b>*</b>					٠.		320
	Pathophysiology										
	Secondary Hypertension .										
	Treatment										
	Kidney Disease										
	Hypertension and Pregnancy										
A	nswers to Current Literati	ır	e (	Նա	Z						385

## **Current Literature Quiz**

The significant advances described in this Year Book introduce new diagnostic and therapeutic procedures useful for treating conditions seen frequently in your practice. The following questionnaire will test your familiarity with the current literature. The correct answers are given in the back of the book.

- 1. Why is hemoptysis in patients with septic pulmonary infarcts from tricuspid endocarditis such a serious complication?
- 2. Can electroconvulsive therapy be given to patients who have cardiac pacemakers?
- 3. Can flutter of the mitral valve, as detected with the echocardiogram and associated with a diastolic murmur, be present in a normal heart?
- Endocarditis due to resistant viridans streptococci while the patient is on oral penicillin chemoprophylaxis is: (a) rare, (b) fairly frequent, (c) very frequent.
- 5. What is the mortality among patients who have tuberculous pericarditis?
- 6. How is the echocardiogram of an occasional patient with mitral valve prolapse confused at times with a left atrial myxoma?
- 7. Large daily doses (average 462 mg) of propranolol were given to 22 patients with hypertrophic obstructive cardiomyopathy and followed for a mean of 5 years. Which of the following is correct?
  - (a) There were no deaths and recurrent syncope was eliminated.
  - (b) Even these large "complete"  $\beta$ -blocking doses had no significant result.
- 8. Doxorubicin (adriamycin) may be very effective in the treatment of numerous cancers, however it may produce a serious complication of the heart. What is it?
- 9. Is pericardiocentesis worthwhile?
- 10. What is the present status of the isotopic cardiac pacemaker?
- 11. What are the cardiovascular manifestations of the hypereosinophilic syndrome? What is the prognosis if the disorder is recognized and treated?