

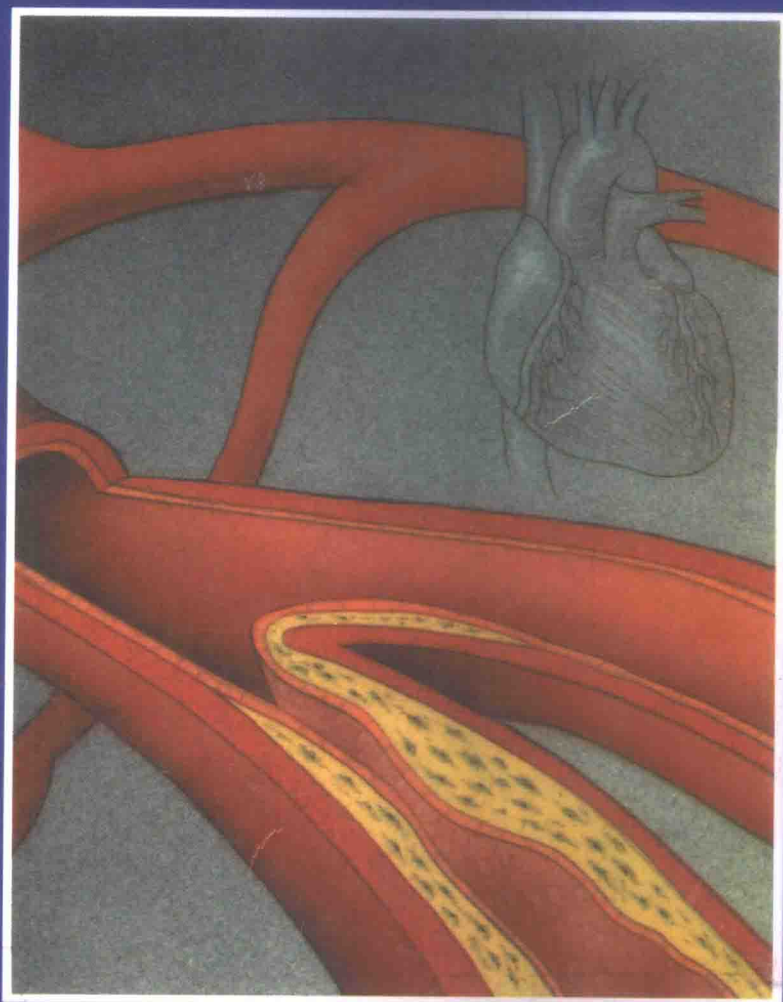
美国著名医学院校教材系列

Essentials of

Pathophysiology

病理生理学精要

(英文影印版)



Chris E. Kaufman, M.D.
Patrick A. McKee, M.D.



中国协和医科大学出版社



LIPPINCOTT WILLIAMS & WILKINS

美国著名医学院校教材系列

(英文影印版)

病理生理学精要

Essentials of Pathophysiology

Chris E. Kaufman, MD

Patrick A. Meke, MD



中国协和医科大学出版社



LIPPINCOTT WILLIAMS & WILKINS

A Wolters Kluwer Company

Philadelphia • Baltimore • New York • London
Buenos Aires • Hong Kong • Sydney • Tokyo

图书在版编目 (CIP) 数据

病理生理学精要 = Essentials of Pathophysiology/ (美) 考夫曼 (Kaufman, C. E.), (美) 麦基 (McKee, P. A.) 著—北京: 中国协和医科大学出版社, 2002.1

ISBN 7-81072-262-X

I. 病… II. ①考… ②麦… III. 病理生理学-英文 IV. R363

中国版本图书馆 CIP 数据核字 (2001) 第 094570 号

Chris E. Kaufman / Patrick A. McKee: Essentials of Pathophysiology

ISBN: 0-316-48405-9

Copyright (c) 1996 by Little, Brown and Company (Inc.)

Original language published by Lippincott Williams & Wilkins. All Rights reserved. No part of this publication may be reproduced or distributed in any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

Authorized English language reprint jointly published by Lippincott Williams & Wilkins and Peking Union Medical College Press, under the assistance of Waverly Medical Information Technology (Beijing) Co., Ltd.

This edition is authorized for sale in the People's Republic of China only, excluding Hong Kong, Macao SAR and Taiwan. Unauthorized export of this edition is a violation of the Copyright Act. Violation of this Law is subject to Civil and Criminal Penalties.

本书英文影印版由中国协和医科大学出版社和美国 Lippincott Williams & Wilkins 出版公司合作出版, 并得到了卫理医学信息技术 (北京) 有限公司的协助。此版本仅限在中华人民共和国境内 (不包括香港、澳门特别行政区及台湾) 销售。未经许可之出口, 视为违反著作权法, 将受法律之制裁。

未经出版者预先书面许可, 不得以任何方式复制或抄袭本书的任何部分。北京市版权局著作权合同登记号: 图字: 01-2001-5105 号

Essentials of Pathophysiology 病理生理学精要

作者: Chris E. Kaufman/Patrick A. McKee
责任编辑: 顾良军

出版发行: 中国协和医科大学出版社
(北京东单三条九号 邮编 100730 电话 65260378)

网 址: <http://www.pumcp.com>
经 销: 新华书店总店北京发行所
印 刷: 北京竺航印刷厂

开 本: 787 × 1092 毫米 1/16 开
印 张: 51
字 数: 1264 千字
版 次: 2002 年 1 月第一版 2002 年 1 月第一次印刷
印 数: 1—3000
定 价: 98.00 元

ISBN 7-81072-262-X/R·257

(凡购本书, 如有缺页、倒页、脱页及其他质量问题, 由本社发行部调换)

Plate Legends

Plate 1. Peripheral blood smear in acute lymphocytic leukemia. The lymphoblast (arrow) is of the L3 histologic subtype. Note the enormity of this cell in comparison to normal erythrocytes in the field. The blast cell has the characteristic high nuclear : cytoplasmic ratio, dark blue cytoplasm, and vacuoles seen in L3 lymphoblasts. In addition, immature neutrophils and a nucleated red blood cell are characteristic of the myelophthisic blood picture.

Plate 2. Peripheral blood smear in chronic lymphocytic leukemia. The malignant cells appear histologically like normal lymphocytes. The size approximates that of an erythrocyte and is markedly smaller and quite distinct from the appearance of the lymphoblast in Plate 1. Also shown is the typical smudge cell seen in chronic lymphocytic leukemia. Some variability of the size and shape of the malignant cells is not uncommon, but the majority of the lymphocytes are rather bland.

Plate 3. Bone marrow aspirate in multiple myeloma. The marrow shows a large number of plasma cells (PC). These cells may be morphologically normal or abnormal, such as the binucleate plasma cell (BN). The erythroid (E) and myeloid (M) cells in the background appear normal, because they are unaffected by the malignant clone.

Plate 4. Monosodium urate monohydrate crystals aspirated from a tophus of a patient with gout. Numerous needle-shaped crystals are seen, without inflammatory cells. A. Under polarized light with a red compensator, urate crystals show negative birefringence; thus, all crystals whose long axis is parallel to the slow axis of vibration of the

red compensator (arrow) appear yellow (white in these photographs), while those lying perpendicular appear blue. Some crystals lying obliquely are seen to extinguish (appear dark). B. When the same field is viewed so the axis of the compensator (arrow) is turned 90 degrees from that in A, each individual crystal that appeared yellow becomes blue, and those appearing blue become yellow. (Courtesy of Jan Pitha, M.D.)

Plate 5. Immunofluorescence of a glomerulus showing linear staining for IgG typical of anti-glomerular basement membrane glomerulonephritis. (Courtesy of Fred Silva, M.D.)

Plate 6. Immunofluorescence of a glomerulus showing granular staining of the peripheral capillary loops and mesangial areas. (Courtesy of Zoltan Laszik, M.D.)

Plate 7. Red cell cast, unstained (original magnification 400×).

Plate 8. Acute tubulointerstitial nephritis. Marked inflammatory cell infiltrate in the interstitium along with edema causing tubular separation (hematoxylin-eosin stain, original magnification 250×). (Courtesy of K. Min, M.D.)

Plate 9. Photomicrograph of Cowdry type A intranuclear inclusions.

Plate 10. Photomicrograph of cerebral toxoplasmosis shows three cysts (arrows) and free multiple organisms (tiny spots near bottom arrows).

Preface

Essentials of Pathophysiology emphasizes the relationships between abnormal function and clinical manifestations of disease. It was created according to four pedagogic principles. First, throughout the text, the reader will review the language of physiology and, to a certain extent, pathology from the standpoint of *words and symbols* that depict normal and abnormal function. Second, factual knowledge about disease is laid out in an economical way to facilitate retention of key information. Third, the reader is guided to recall and arrange this information in logical ways that lead to the correct interpretation and understanding of signs and symptoms of illness. Fourth, frequent repetition of facts and concepts throughout the text, and their presentation in different formats and relationships, augment the ability to recall information and construct a conceptual framework for its application.

The text does not provide detailed descriptions of cellular and molecular aberrations that lead to disease, it does not address all diseases known, and it cannot substitute for more comprehensive textbooks. Instead, the text primarily discusses how deranged function becomes manifest in frequently encountered and illustrative human diseases.

Essentials of Pathophysiology was written primarily to help medical students and residents make the transition from the basic science-oriented years of learning to the patient's bedside, by explaining structure-function relationships for each organ system and the resultant signs and

symptoms of common illnesses. Each chapter begins with a list of learning objectives and concludes with one or more case histories that exemplify how the history, physical examination, and laboratory findings can be explained if one comprehends the underlying pathophysiology.

The book contains numerous tables and illustrations selected to enhance understanding. Board examination-type questions are provided at the end of each part to test whether facts can be logically integrated and applied to clinical problems. In short, the overarching goal is to draw the reader toward an enhanced ability for clinical problem solving through orderly arrangements and interpretations of factual knowledge.

The book should be a powerful complement to most medical school pathophysiology courses. We expect that physicians-in-training and practicing physicians will find the book useful for review of the basic science concepts underlying clinical practice. The book should also facilitate preparation for medical board examinations as well as those required for certification by the osteopathic, dental, nursing, and physician assistant professions.

We are most appreciative of the hard work and caring attention that Beverly Clarke, our administrative assistant, provided in assembling and editing this book.

C. E. K.
P. A. M.

Contributing Authors

Mary Zoe Baker, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Karen J. Beckman, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Marie A. Bernard, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Associate Chief of Staff, Department of Geriatrics and Extended Care, Veterans Affairs Medical Center, Oklahoma City

Brian G. Birdwell, M.D.

Instructor and National Institutes of Health Research Fellow, Department of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Gary B. Bobele, M.D.

Director, Section of Pediatric Neurology, Driscoll Children's Hospital, Corpus Christi, Texas

Sylvia S. Bottomley, M.D.

Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

James E. Bourdeau, M.D., Ph.D.

Nephrology Associates of Waukesha, S.C., Waukesha, Wisconsin

Brent R. Brown, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Roger A. Brumback, M.D.

Professor of Pathology, University of Oklahoma College of Medicine; Staff Pathologist, University Hospital, Oklahoma City

Vikki A. Canfield, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Paul V. Carlile, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

L. Philip Carter, M.D.

Professor and Chairman, Department of Neurosurgery, University of Oklahoma College of Medicine; Chief, Department of Neurosurgery, University Hospital, Oklahoma City

Thomas H. Carter, M.D., Ph.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Keith F. Clark, M.D.

Associate Professor of Otorhinolaryngology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Dennis L. Confer, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Director, Bone Marrow Transplant Unit, University Hospital, Oklahoma City

James R. Couch, Jr., M.D., Ph.D.

Professor and Chairman, Department of Neurology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Matthew T. Draelos, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

E. Randy Eichner, M.D.

Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Bradley K. Farris, M.D.

Associate Professor of Ophthalmology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Douglas P. Fine, M.D.

Professor and Chairman, Department of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

Dale A. Freeman, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

James N. George, M.D.

Professor and Chief, Section of Hematology-Oncology, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

Barry A. Gray, M.D., Ph.D.

Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

Ralph T. Guild III, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Chief, Section of Digestive Diseases/Nutrition, Veterans Affairs Medical Center, Oklahoma City

Mary K. Gumerlock, M.D.

Associate Professor of Neurosurgery, University of Oklahoma College of Medicine; Surgeon, Veterans Affairs Medical Center, Oklahoma City

Michael R. Hahn, M.D.

Resident, Department of Neurosurgery, University of Oklahoma College of Medicine, Oklahoma City

Karen K. Hamilton, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

John B. Harley, M.D., Ph.D.

Professor and James R. McEldowney Chair in Immunology, University of Oklahoma College of Medicine; Associate Member, Arthritis and Immunology Program, Oklahoma Medical Research Foundation, Oklahoma City

Gary W. Harris, M.D.

Clinical Assistant Professor of Ophthalmology, University of Oklahoma College of Medicine, Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

Richard F. Harty, M.D.

Professor and Chief, Section of Digestive Disease and Nutrition, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Farhat Husain, M.B.B.S.

Assistant Professor of Neurology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Donald J. Kastens, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Chris E. Kaufman, M.D.

Professor and Chief, Section of Nephrology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

David C. Kem, M.D.

Professor and Chief, Section of Endocrinology, Metabolism, and Hypertension, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Sudhir K. Khanna, M.D., M.R.C.P., F.R.C.P.C.
Staff Nephrologist, Baptist Medical Center,
Oklahoma City

Gary T. Kinasewitz, M.D.
Professor and Chief, Section of Pulmonary
Diseases, University of Oklahoma College of
Medicine; Staff Physician, University Hospital,
Oklahoma City

Jeanne A. King, M.D.
Assistant Professor of Neurology, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital, Oklahoma City

Michael A. Kolodziej, M.D.
Assistant Professor of Medicine, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital, Oklahoma City

Satish Kumar, M.D.
Assistant Professor of Medicine, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital and Veterans Affairs Medical
Center, Oklahoma City

Ralph Lazzara, M.D.
Professor and Chief, Section of Cardiology,
University of Oklahoma College of Medicine; Staff
Physician, University Hospital, Oklahoma City

Richard W. Leech, M.D.
Professor and Vice-Chairman for Administrative
Affairs, Department of Pathology, University of
Oklahoma College of Medicine; Staff Pathologist,
University Hospital, Oklahoma City

David C. Levin, M.D.
Professor of Medicine, University of Oklahoma
College of Medicine; Staff Physician, University
Hospital and Veterans Affairs Medical Center,
Oklahoma City

D. Robert McCaffree, M.D.
Professor of Medicine, University of Oklahoma
College of Medicine; Chief of Staff, Veterans Affairs
Medical Center; Staff Physician, University
Hospital, Oklahoma City

Paul N. Maton, M.D.
Director, Oklahoma Foundation for Digestive
Research; Staff Physician, Presbyterian Hospital,
Oklahoma City

Anil Minocha, M.D.
Associate Professor of Medicine, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital and Veterans Affairs Medical
Center, Oklahoma City

Harry S. Ojeas, M.D.
Fellow, Section of Digestive Diseases and Nutrition,
University of Oklahoma College of Medicine,
Oklahoma City

Leann Olansky, M.D.
Associate Professor of Medicine, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital, Oklahoma City

Samuel R. Oleinick, M.D., Ph.D.
Professor of Medicine, University of Oklahoma Col-
lege of Medicine; Staff Physician, University Hospital
and Veterans Affairs Medical Center, Oklahoma City

Edwin G. Olson, M.D.
Attending Physician, Section of Cardiology,
Methodist Medical Center, Dallas

Edward Overholt, M.D.
Associate Professor of Pediatrics, University of
Oklahoma College of Medicine; Staff Physician,
Children's Hospital of Oklahoma, Oklahoma City

Julie T. Parke, M.D.
Clinical Associate Professor of Neurology, University
of Oklahoma College of Medicine; Staff Physician,
Children's Hospital of Oklahoma, Oklahoma City

James A. Pederson, M.D.
Professor of Medicine, University of Oklahoma Col-
lege of Medicine; Staff Physician, University Hospital
and Veterans Affairs Medical Center, Oklahoma City

Osvaldo H. Perurena, M.D.
Assistant Professor of Neurology, University of
Oklahoma College of Medicine; Staff Physician,
University Hospital, Oklahoma City

Laura I. Rankin, M.D.

Adjunct Professor of Medicine, University of Oklahoma College of Medicine; Staff Nephrologist, Baptist Medical Center, Oklahoma City

Robert A. Rankin, M.D.

Staff Gastroenterologist, University Hospital, Oklahoma City

Morris Reichlin, M.D.

Professor and Chief, Section of Immunology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Regina Resta, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Eliot Schechter, M.D.

Professor of Medicine, University of Oklahoma College of Medicine; Director, Cardiac Catheterization Laboratory, Veterans Affairs Medical Center, Oklahoma City

Sanford Schneider, M.D.

Presbyterian Health Foundation Professor of Neurology, University of Oklahoma College of Medicine; Chief, Section of Child Neurology, Children's Hospital of Oklahoma, Oklahoma City

R. Hal Scofield, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital and Veterans Affairs Medical Center, Oklahoma City

Chittur A. Sivaram, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Chief, Section of Cardiology, Veterans Affairs Medical Center, Oklahoma City

Haraldine A. Stafford, M.D., Ph.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Leslie S. Staudt, M.D.

Assistant Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Ira N. Targoff, M.D.

Associate Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Udho Thadani, M.B.B.S., M.R.C.P., F.R.C.P.C.

Professor and Vice-Chief and Director of Clinical Research, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Martin H. Welch, M.D.

Professor of Medicine, University of Oklahoma College of Medicine; Director, Pulmonary Function Laboratory, University Hospital, Oklahoma City

James H. Wells, M.D.

Professor of Medicine, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

Thomas L. Whitsett, M.D.

Professor of Medicine and Pharmacology, University of Oklahoma College of Medicine; Director, Vascular Medicine Program, University Hospital, Oklahoma City

Peggy J. Wisdom, M.D.

Associate Professor of Neurology, University of Oklahoma College of Medicine; Staff Physician, University Hospital, Oklahoma City

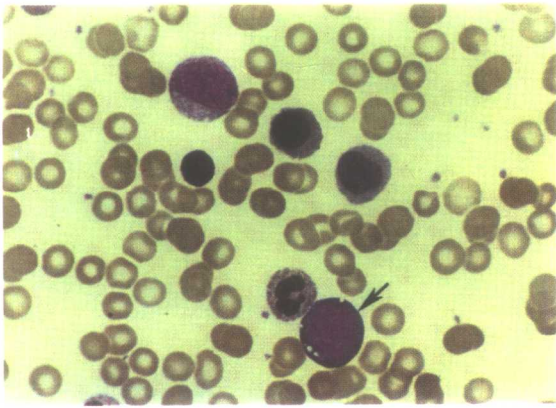


Plate 1

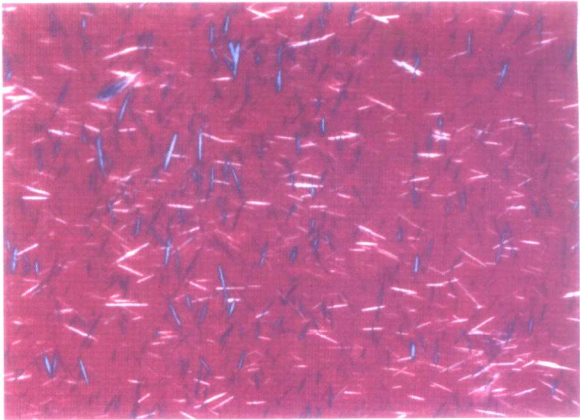


Plate 4A

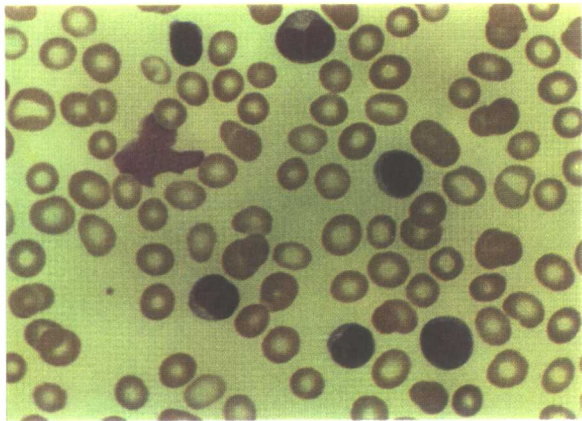


Plate 2

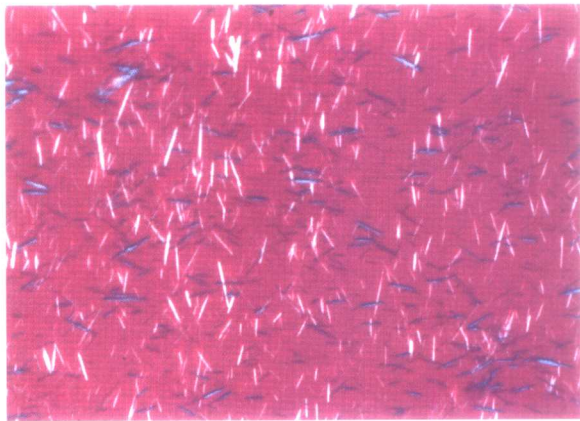


Plate 4B

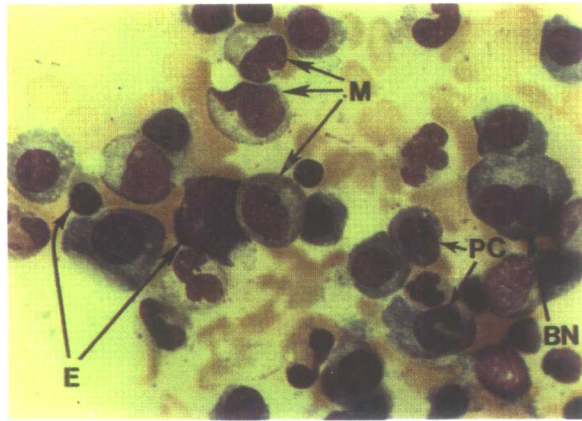


Plate 3

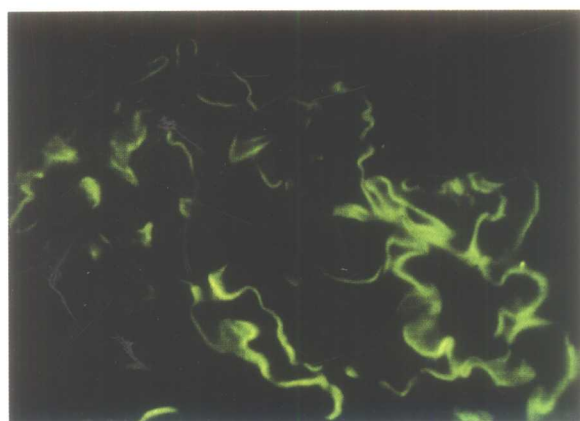


Plate 5

Legends for Plates are on page ix.

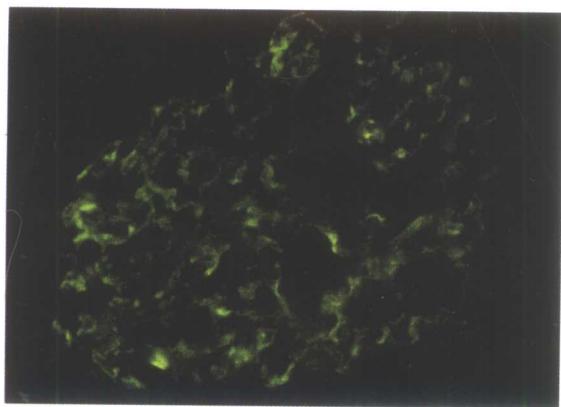


Plate 6

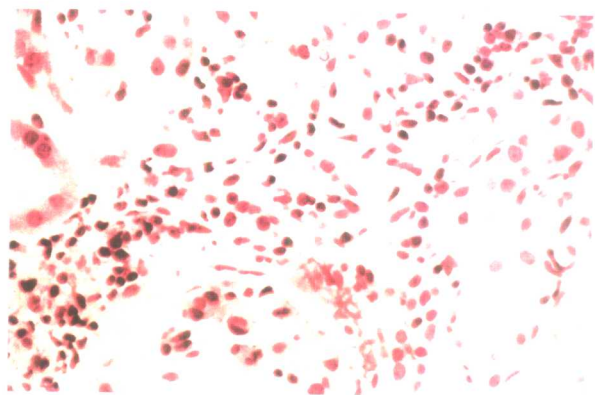


Plate 8

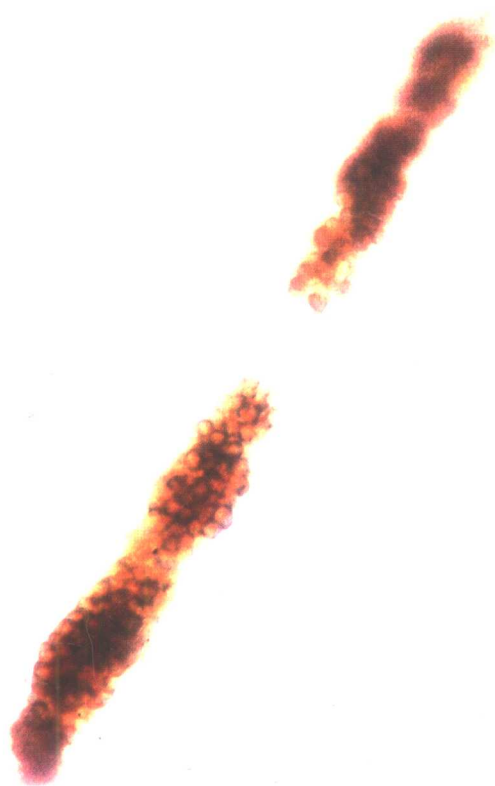


Plate 7

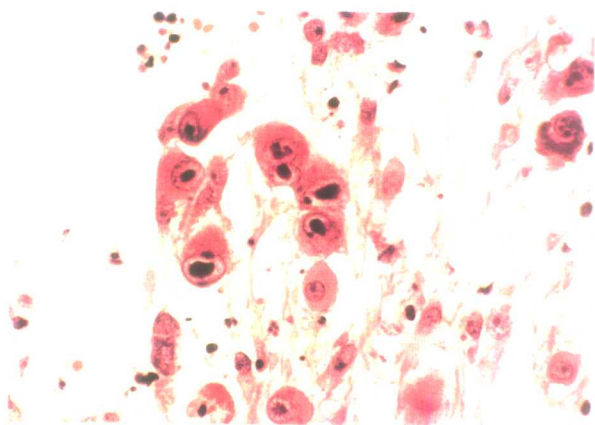


Plate 9



Plate 10

Legends for Plates are on page ix.

Essentials of Pathophysiology

309735

Contents

Plate Legends	ix
Preface	xi
Contributing Authors	xiii

I. CARDIOVASCULAR DISEASES

Udho Thadani, part editor

1. Cardiac Arrhythmias and Conduction Disturbances 3
Karen J. Beckman and Ralph Lazzara
 2. Myocardial Performance: Systolic and Diastolic Function 13
Eliot Schechter
 3. Common Forms of Volume and Pressure Overload: Valvular Heart Disease 25
Eliot Schechter
 4. Congenital Heart Disease and Intracardiac Shunts 35
Edward Overholt
 5. Myocardial Ischemia and Infarction 43
Udho Thadani
 6. Cardiomyopathies 55
Chittur A. Sivaram
 7. Pulmonary Heart Disease 63
Karen K. Hamilton
 8. Pericardial Disease 71
Edwin G. Olson
 9. Infective Endocarditis 83
Chittur A. Sivaram and Douglas P. Fine
 10. Congestive Heart Failure 91
Udho Thadani
 11. Shock Syndrome 101
Karen K. Hamilton
 12. Hypertension 109
David C. Kem
 13. Peripheral Vascular Disease 117
Brian G. Birdwell and Thomas L. Whitsett
 14. Cardiovascular Wellness, Exercise, and Prevention of Heart Disease 129
E. Randy Eichner
- Part I Questions: Cardiovascular Diseases 139

II. DIGESTIVE DISEASES AND NUTRITION

Richard F. Harty, part editor

15. Esophagus 143
Donald J. Kastens
 16. Stomach and Duodenum 151
Paul N. Maton
 17. Pancreas 161
Robert A. Rankin
 18. Liver and Biliary Tract 169
Richard F. Harty
 19. Small Intestine 187
Anil Minocha
 20. Colon 199
Richard F. Harty and Harry S. Ojeas
 21. Clinical Nutrition 211
Marie A. Bernard and Ralph T. Guild III
- Part II Questions: Digestive Diseases and Nutrition 217

III. ENDOCRINE AND METABOLIC DISORDERS

David C. Kem, part editor

22. Hormone Action 221
R. Hal Scofield
 23. Adrenal-ACTH 231
Dale A. Freeman
 24. Diabetes Mellitus and Glucose Metabolism 239
Leann Olansky
 25. Reproductive System 249
Dale A. Freeman
 26. Anterior and Posterior Pituitary 257
Matthew T. Draelos
 27. Thyroid 267
R. Hal Scofield
 28. Metabolic Bone Disease 277
Mary Zoe Baker
- Part III Questions: Endocrine and Metabolic Disorders 285

IV. HEMATOLOGIC AND NEOPLASTIC DISORDERS

James N. George, part editor

29. Red Cells, Anemia, and Erythrocytosis 289

Sylvia S. Bottomley

30. Disorders of Myelopoiesis 303

Dennis L. Confer

31. Lymphocytes and Lymphoproliferative Disorders 313

Regina Resta and Michael A. Kolodziej

32. Oncogenesis and the Genetic Basis of Cancer 325

Thomas H. Carter

33. Cancer: Biology and Clinical Course 339

Vikki A. Canfield

34. Hemostasis and Thrombosis 347

James N. George

Part IV Questions: Hematologic and Neoplastic Disorders 359

V. RHEUMATOLOGIC AND IMMUNOLOGIC DISORDERS

Morris Reichlin, part editor

35. Organization of the Immune System: Mechanisms of Immune Injury 363

John B. Harley

36. Immediate Hypersensitivity Diseases 375

James H. Wells

37. Allergic Respiratory Diseases 385

James H. Wells

38. Systemic Rheumatic Diseases 397

Morris Reichlin

39. Immunodeficiency 405

Samuel R. Oleinick

40. Osteoarthritis 417

Haraldine A. Stafford

41. Rheumatoid Arthritis 427

Leslie S. Staudt

42. Gout and Crystal Disease 437

Ira N. Targoff

Part V Questions: Rheumatologic and Immunologic Disorders 449

VI. PULMONARY DISEASES

Paul V. Carlile, part editor

43. Pulmonary Gas Exchange 453

D. Robert McCaffree

44. Respiratory System Mechanics 465

Paul V. Carlile

45. Control of Breathing 477

Barry A. Gray

46. Diseases of Air Flow Limitation 491

David C. Levin

47. Interstitial Lung Disease 501

Martin H. Welch

48. Pulmonary Edema 513

Barry A. Gray

49. Diseases of the Pleural Space 525

Gary T. Kinasewitz

50. Venous Thromboembolism 533

Brent R. Brown

Part VI Questions: Pulmonary Diseases 543

VII. RENAL AND ELECTROLYTE DISORDERS

Chris E. Kaufman, part editor

51. Disorders of Sodium and Water Metabolism 547

Chris E. Kaufman

52. Disorders of Potassium Homeostasis 557

Satish Kumar

53. Acid-Base Disturbances 569

James A. Pederson

54. Disorders of Calcium, Phosphate, and Magnesium 581

James E. Bourdeau

55. Glomerular Disorders 595

Sudhir K. Khanna

56. Acute Renal Failure 605

Laura I. Rankin

57. Chronic Renal Failure 615

James E. Bourdeau and Chris E. Kaufman

58. Tubulointerstitial Disorders 627

Sudhir K. Khanna

Part VII Questions: Renal and Electrolyte Disorders 635

VIII. NEUROLOGIC DISEASES AND SPECIAL SENSES

Peggy J. Wisdom, part editor

59. Disorders of Consciousness and Cognition 639

Peggy J. Wisdom

60. The Motor System 651

Farhat Husain and Julie T. Parke

61. The Sensory System 667

Osvaldo H. Perurena

62. The Extrapyramidal System 679

Gary B. Bobele

63. The Cerebellar System 689

Sanford Schneider

64. The Special Senses and Oculomotor System 695

Bradley K. Farris, Keith F. Clark, and Gary W. Harris

65. Disorders of Cerebrospinal Fluid and Intracranial Pressure 711

Mary K. Gumerlock

66. Seizures and Epilepsy 719

Jeanne A. King

67. Head Pain and Cranial Neuralgia 729

James R. Couch, Jr.

68. Cerebrovascular Disorders 739

Michael R. Hahn and L. Philip Carter

69. Infections of the Central Nervous System 753

Richard W. Leech and Roger A. Brumback

Part VIII Questions: Neurologic Diseases and Special Senses 763

Answers 765

Index 773

I Cardiovascular Diseases

Part Editor

Udho Thadani

Notice

The indications and dosages of all drugs in this book have been recommended in the medical literature and conform to the practices of the general medical community. The medications described do not necessarily have specific approval by the Food and Drug Administration for use in the diseases and dosages for which they are recommended. The package insert for each drug should be consulted for use and dosage as approved by the FDA. Because standards for usage change, it is advisable to keep abreast of revised recommendations, particularly those concerning new drugs.