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CASE FILES®
Pathology
病理学案例50例

EUGENE C. TOY,MD
The John S. Dunn Senior Academic Chief and Program Director

Obstetrics and Gynecology Residency Program
The Methodist Hospital, Houston
Clerkship Director and Clinical Associate Professor
Department of Obstetrics and Gynecology
University of Texas Medical School at Houston
Houston, Texas

MARGARET O. UTHMAN, MD
Professor and Vice Chairman for Education
Assistant Dean for Educational Programs
University of Texas Medical School at Houston
Houston, Texas

ED UTHMAN, MD
Adjunct Professor, Department of Pathology
University of Texas Medical School at Houston
Pathologist, Brown and Associates Medical Laboratories
Houston, Texas

EARL J. BROWN, MD
Associate Professor
Department of Pathology
East Tennessee State University–James H. Quillen
College of Medicine
Johnson City, Tennessee

北京大学医学出版社

图书在版编目（CIP）数据

病理学案例50例 = Case files:Pathology：第2版：英文/（美）拖伊（Toy,E.C.），（美）尤特曼（Uthman,M.O.），等编．—北京：北京大学医学出版社，2013.11
ISBN 978-7-5659-0699-2

Ⅰ．①病… Ⅱ．①拖… ②尤… Ⅲ．①病理学－病案－教材－英文 Ⅳ．①R36

中国版本图书馆CIP数据核字（2013）第268633号

Eugene C. Toy，Margaret O. Uthman, et al.
Case Files: Pathology,Second Edition
ISBN 978-0-07-148666-8

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病理学案例50例（第2版）

编　　写：Eugene C. Toy，Margaret O. Uthman，等
出版发行：北京大学医学出版社（电话：010-82802230）
地　　址：（100191）北京市海淀区学院路38号　北京大学医学部院内
网　　址：http://www.pumpress.com.cn
E-mail：booksale@bjmu.edu.cn
印　　刷：北京画中画印刷有限公司
经　　销：新华书店
责任编辑：冯智勇　　**责任校对**：齐　欣　　**责任印制**：张京生
开　　本：970mm×650mm　1/16　　**印张**：30　**字数**：567千字
版　　次：2014年1月第1版　2014年1月第1次印刷
书　　号：ISBN 978-7-5659-0699-2
定　　价：86.00元

出版说明

Case Files 是美国麦格劳 - 希尔教育出版公司医学图书中的著名品牌系列图书，被世界多所著名医学院校选定为教学用书。北京大学医学出版社与麦格劳 - 希尔教育出版公司合作，全套影印出版了该丛书。包括：

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该丛书具有以下特点：

一、形式上，原版图书影印，忠实展现原版图书的原汁原味，使国内读者直接体会医学原版英文图书的叙述方式和叙述风格。

二、内容上，每个分册包含几十个经典案例。基础学科强调与临床的结合，临床学科强调临床思维的培养。

三、以案例和问题导入，互动式学习，尤其适合 PBL（问题为中心的学习）和 CBL（案例为中心的学习）。

本系列书可作为医学院校双语教学或留学生教学的教材或教学辅导用书，也是医学生学习医学英语的优秀读物。在世界范围内，该系列书还是参加美国医师执照考试的必备用书。

北京大学医学出版社

DEDICATION

To my dear wife, Terri, my first and only true love.
She encourages me each day and is my enduring inspiration.

—ECT

To Dr. Aubrey Hough, my chairman during residency training,
and to Dr. Harvey Rosenberg
who gave me my first (and only) faculty position.

—MOU

For those who taught me the basics of pathology:
Sidney A. Coleman, MD, Robert Joseph Peace, MD, and Fred Shipkey, MD.

—EU

To Darlene, who has showed me how to once again dream of good things.

—EJB

❖ CONTRIBUTORS

John E. Bertini, Jr, MD, FACS
Academic Chief
Department of Urology
St. Joseph Medical Center
Houston, Texas
Testicular Cancer

Tri A. Dinh, MD
Assistant Professor of Obstetrics and Gynecology
Division of Gynecologic Oncology
Weill Medical College of Cornell University
Attending Physician
The Methodist Hospital, Houston
Houston, Texas
Paget Disease

Alaina J. Johnson
Medical Student
Class of 2008
University of Texas Medical School at Houston
Houston, Texas
Principal Manuscript Reviewer
Alzheimer Disease
Hepatitis
Pneumococcal Pneumonia
Nephrotic Syndrome
Temporal Arteritis

Alan L. Kaplan, MD
Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
Chairman, Department of Obstetrics and Gynecology
The Methodist Hospital, Houston
Houston, Texas
Ovarian Teratoma

Raymond H. Kaufman, MD
Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
Professor Emeritus
Department of Obstetrics and Gynecology
Baylor College of Medicine
Houston, Texas
Cervical Cancer

Aaron Han, MD, PhD
Consultant Pathologist and Chief
Department of Pathology and Laboratory Medicine
American Hospital Dubai
Dubai, United Arab Emirates
Colon Adenomas
Ventricular Septal Defect

Laura Han, MD
Pediatrician, Private Practice
Dubai, United Arab Emirates
Ventricular Septal Defect

Eric Haufrect, MD
Clinical Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
Vice Chairman
Department of Obstetrics and Gynecology
The Methodist Hospital, Houston
Houston, Texas
Fibrocystic Changes

George T. Kuhn, MD, FACOG
Chairman
Department of Obstetrics and Gynecology
St. Joseph Medical Center
Houston, Texas
Pulmonary Embolus

Sonia Robazetti Hodgson, MD, CCRC
Research Coordinator
Department of Obstetrics and Gynecology
The Methodist Hospital, Houston
Houston, Texas
Cervical Cancer

Samuel W. Law II, MD
Clinical Associate Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
Medical Director of Labor and Delivery
Department of Obstetrics and Gynecology
The Methodist Hospital, Houston
Houston, Texas
Syphilis

Claudel Jean-Pierre, MD
Assistant Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
Faculty
Division of Maternal Fetal Medicine
Department of Obstetrics and Gynecology
The Methodist Hospital, Houston
Houston, Texas
Neural Tube Defects

John T. Patlan, MD
Assistant Professor of Medicine
Department of General Internal Medicine
University of Texas–MD Anderson Cancer Center
Houston, Texas
Hepatitis

Waverly F. Peakes, MD
Residency Coordinator
Obstetrics and Gynecology Residency Program
The Methodist Hospital, Houston
Houston, Texas
Prolactin Adenoma

Keith O. Reeves, MD
Clinical Professor of Obstetrics and Gynecology
Weill Medical College of Cornell University
Attending Physician
The Methodist Hospital, Houston
Houston, Texas
Appendicitis

Priti P. Schachel, MD
Assistant Professor
Department of Obstetrics and Gynecology
Weill Medical College of Cornell University
The Methodist Hospital, Houston
Houston, Texas
Ovarian Teratomas

Anna Sienko, MD, FRCP(C)
Associate Professor
Department of Pathology
Weill Medical College of Cornell University
Staff Pathologist
The Methodist Hospital, Houston
Houston, Texas
Syphilis

Jeané Simmons Holmes, MD, FACOG
Assistant Clinical Professor
Obstetrics and Gynecology Residency Program
The Methodist Hospital, Houston
Houston, Texas
Human Immunodeficiency Virus
Stroke

❖ ACKNOWLEDGMENTS

The inspiration for this basic science series originated at an educational retreat led by Dr. Maximilian Buja, who at that time was Dean of the Medical School. It has been a joy to work with Dr. Margaret Uthman and her husband, Dr. Ed Uthman, and Dr. Earl J. Brown who are accomplished mentors, scientists, and teachers. Likewise, I would like to thank the hard work of the other contributors. I especially thank Alaina Johnson, a fourth year medical student, for her time and expertise in helping to edit this book, adding high yield tables and reviewing the manuscript for readability. I appreciate McGraw-Hill for believing in the concept of teaching by clinical cases, and I owe a great debt to Catherine Johnson, who has been a fantastically encouraging and enthusiastic editor. Alaina wishes to acknowledge God, for giving her the grace and strength to pursue a career in medicine, and her parents, Allan and Kelly, for their constant encouragement, sacrifice, and dedication to helping her achieve her goals. At the Methodist Hospital, I appreciate Drs. Mark Boom, Karin Pollock-Larsen, H. Dirk Sostman, and Judy Paukert, and Mr. John Lyle and Mr. Reggie Abraham. At St. Joseph Medical Center, I would like to recognize our outstanding administrators: Phil Robinson, Pat Mathews, Laura Fortin, Dori Upton, Cecile Reynolds, and Drs. John Bertini and Thomas V. Taylor. I appreciate Marla Buffington's advice and assistance. Without the help from my colleagues in the Southwest Community Clinic, Bernie King, Cornell McKenzie, Carlissa Bowler, Kathy Hinze, Laura P Fernandez, and Sr. Roseanne Popp, MD, this book could not have been written. Most important, I am humbled by the love, affection, and encouragement from my lovely wife, Terri, and our four children, Andy, Michael, Allison, and Christina.

Eugene C. Toy

❖ INTRODUCTION

Often, the medical student will cringe at the "drudgery" of the basic science courses and see little connection between a field such as pathology and clinical problems. Clinicians, however, often wish they knew more about the basic sciences, because it is through the science that we can begin to understand the complexities of the human body and thus have rational methods of diagnosis and treatment.

Mastering the knowledge in a discipline such as pathology is a formidable task. It is even more difficult to retain this information and to recall it when the clinical setting is encountered. To accomplish this synthesis, pathology is optimally taught in the context of medical situations, and this is reinforced later during the clinical rotations. The gulf between the basic sciences and the patient arena is wide. Perhaps one way to bridge this gulf is with carefully constructed clinical cases that ask basic science-oriented questions. In an attempt to achieve this goal, we have designed a collection of patient cases to teach pathology-related points. More important, the explanations for these cases emphasize the underlying mechanisms and relate the clinical setting to the basic science data. We explore the principles rather than emphasize rote memorization.

This book is organized for versatility: to allow the student "in a rush" to go quickly through the scenarios and check the corresponding answers and to provide more detailed information for the student who wants throught-provoking explanations. The answers are arranged from simple to complex: a summary of the pertinent points, the bare answers, a clinical correlation, an approach to the pathology topic, a comprehension test at the end for reinforcement or emphasis, and a list of references for further reading. The clinical cases are arranged by system to better reflect the organization within the basic science. Finally, to encourage thinking about mechanisms and relationships, we intentionally did not primarily use a multiple-choice format at the beginning of each case. Nevertheless, several multiple-choice questions are included at the end of each scenario to reinforce concepts or introduce related topics.

HOW TO GET THE MOST OUT OF THIS BOOK

Each case is designed to introduce a clinically related issue and includes open-ended questions usually asking a basic science question, but at times, to break up the monotony, there will be a clinical question. The answers are organized into four different parts:

PART I

1. **Summary**
2. A **straightforward answer** is given for each open-ended question.
3. **Clinical Correlation**—A discussion of the relevant points relating the basic science to the clinical manifestations, and perhaps introducing the student to issues such as diagnosis and treatment

PART II

An **approach to the basic science concept** consisting of three parts:

1. **Objectives**—A listing of the two to four main principles that are critical for understanding the underlying pathology to answer the question and relate to the clinical situation
2. **Definitions of basic terminology**
3. **Discussion of topic**

PART III

Comprehension Questions—Each case includes several multiple-choice questions that reinforce the material or introduce new and related concepts. Questions about the material not found in the text are explained in the answers.

PART IV

Pathology Pearls—A listing of several important points, many clinically relevant, reiterated as a summation of the text and to allow for easy review, such as before an examination.

We would like to recognize a great physician, educator, administrator, colleague, and leader, Dr. Maximilian Buja, who served as Dean of the University of Texas Health Science Center–Houston Medical School from 1995 to 2003 before being appointed Executive Vice President for Academic Affairs. Dr. Buja, a pathologist, continues to contribute greatly to the pathology course at the medical school by lecturing on the basic principles of cell injury and inflammation as well as on cardiovascular pathology. He led an educational retreat in 2002 which inspired the concept for this series, joining the clinical case to the basic sciences. Dr. Buja has taught thousands of medical students and serves as a role model and mentor for many pathology residents and scientists.

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SECTION I

Applying the Basic Sciences to Clinical Medicine

Part 1. Approach to Learning Pathology

Part 2. Approach to Disease

Part 3. Approach to Reading

PART 1. APPROACH TO LEARNING PATHOLOGY

Pathology is best learned by a systematic approach, first by learning the **language** of the discipline and then by understanding the **function** of the various processes. Increasingly, the understanding of cell and organ function plays an important role in the understanding of disease processes and the treatment of disease. Initially, some of the "language" must be memorized in the same way that the alphabet must be learned by rote; however, the appreciation of the way the "pathology words" are constructed requires an understanding of mechanisms, in essence, an awareness of "how things are put together and work together."

PART 2. APPROACH TO DISEASE

Physicians usually approach clinical situations by taking a history (asking questions), performing a physical examination, obtaining selected laboratory and imaging tests, and then formulating a diagnosis. The conglomeration of the history, physical examination, and laboratory tests is called the **clinical database.** After a diagnosis has been reached, a treatment plan is usually initiated, and the patient is followed for a clinical response. Rational understanding of disease and plans for treatment are best acquired by learning about the normal human processes on a basic science level, and likewise, being aware of how disease alters the normal physiologic processes is understood on a basic science level. In short, clinical problem solving involves three basic steps: (1) making a diagnosis, (2) initiating a therapy, and (3) monitoring the patient's response.

PART 3. APPROACH TO READING

There are **seven key questions** that help to stimulate the application of basic science information to the clinical setting.

1. **Given histologic findings in an organ, what are the most likely clinical manifestations?**
2. **Given clinical symptoms, if a tissue biopsy is taken, what histologic findings are most likely to be seen?**
3. **Given clinical findings, if the microscopic photograph is shown, what is the most likely diagnosis?**
4. **Given a histologic description, what would be the most likely complication to the organ in question?**
5. **Given a gross description of a pathologic lesion, what is the most likely diagnosis?**
6. **Given autopsy findings, what is the most likely diagnosis?**
7. **Given histologic findings, what is the most likely explanation?**

1. **Given histologic findings in an organ, what are the most likely clinical manifestations?**

   This is a fundamental principle in the understanding of the discipline of pathology. The student first must understand the **normal** histologic structure in an organ in the context of its function. Then the student must be able to relate the **abnormal** histology to clinical findings, both subjective (patient complaints) and objective (physical examination findings). The organ or system is highly organized both on the gross and on the microscopic level. There also must be awareness of the mechanism that causes disruption of the normal cellular architecture.

2. **Given clinical symptoms, if a tissue biopsy is taken, what histologic findings are most likely to be seen?**

   This is the converse of the first question and requires going backward from clinical manifestations to the probable disease process to probable histologic findings. The student must be able to translate the clinical picture to the cellular characteristics. This also requires being aware of what symptoms various cellular alterations will produce in the patient; for instance, some changes will be silent and not cause symptoms, whereas other changes will produce dramatic manifestations.

3. **Given clinical findings, if the microscopic pictograph is shown, what is the most likely diagnosis?**

   This sequence of analysis is very similar to the practice of "real-life" medicine, the role of the pathologist. The clinical history and physical examination are critical to putting the pathologic findings into context. For instance, if endometrial curettings are sent to the pathologist and on microscopy reveal crowded, complex glands, abnormal epithelial nuclei, and loss of nuclear polarity, the pathologist may render a diagnosis of cancer. However, when the information is given that the patient is 6-week pregnant, the diagnosis of an Arias-Stella reaction is made, an expected finding in the endometrium in light of the human chorionic gonadotropin levels of pregnancy. The next logical step is to propose a treatment. Thus, the student should be able to shift back and forth between the basic science and the clinical areas

   Pathophysiology ↔ *Histologic findings* ↔ *Diagnoses* ↔ *Treatment*

4. **Given a histologic description, what would be the most likely complication to the organ in question?**

   This analysis requires that the student be able to relate the histologic findings of one organ to a disease process and then extrapolate the probable changes to another organ. The student should become proficient at working back and forth between histologic changes and clinical findings and disease processes. The best way to acquire this skill is to think in terms of mechanisms of disease and not just memorize key words. It is the understanding of the underlying pathophysiology of the disease that allows the physician-scientist to make rational predictions of the natural history of a disease process.