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第4版

CASE FILES®
Internal Medicine
内科学案例60例

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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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- 生物化学案例 60 例
- 解剖学案例 60 例
- 病理学案例 50 例
- 药理学案例 56 例
- 微生物学案例 60 例
- 内科学案例 60 例
- 外科学案例 56 例
- 妇产科学案例 60 例
- 儿科学案例 60 例
- 神经病学案例 54 例
- 骨科学案例 45 例
- 心脏病学案例 50 例
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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 our coach Victor, and our father-son teammates Bob & Jackson, Steve & Weston, Ron & Wesley, and Dan & Joel. At the inspirational JH Ranch Father-Son Retreat, all of us, including my loving son Andy, arrived as strangers, but in 6 days, we left as lifelong friends.

– ECT

To my parents who instilled an early love of learning and of the written word, and who continue to serve as role models for life.

To my beautiful wife Elsa and children Sarah and Sean, for their patience and understanding, as precious family time was devoted to the completion of "the book."

To all my teachers, particularly Drs. Carlos Pestaña, Robert Nolan, Herbert Fred, and Cheves Smythe, who make the complex understandable, and who have dedicated their lives to the education of physicians, and served as role models of healers.

To the medical students and residents at the University of Texas-Houston Medica School whose enthusiasm, curiosity, and pursuit of excellent and compassionate care provide a constant source of stimulation, joy, and pride.

To all readers of this book everywhere in the hopes that it might help them to gro in wisdom and understanding, and to provide better care for their patients who look to them for comfort and relief of suffering.

And to the Creator of all things, Who is the source of all knowledge and healing power, may this book serve as an instrument of His will.

– JTP

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PREFACE

I have been deeply amazed and grateful to see how the *Case Files®* books have been so well received, and have helped students to learn more effectively. In the 10 short years since *Case Files®: Internal Medicine* has first made it in print, the series has now multiplied to span the most of the clinical and the basic science disciplines, and has been translated into over a dozen foreign languages. Numerous students have sent encouraging remarks, suggestions, and recommendations, Three completely new cases have been written. Updated or new sections include health maintenance, nephritic syndrome, arthritis, diabetes, heart failure, and hyperlipidemia. This fourth edition has been a collaborative work with my wonderful coauthors and contributors, and with the suggestions from four generations of students. Truly, the enthusiastic encouragement from students throughout not just the United States but worldwide provides me the inspiration and energy to continue to write. It is thus with humility that I offer my sincere thanks to students everywhere ... for without students, how can a teacher teach?

Eugene C. Toy

ACKNOWLEDGMENTS

The curriculum that evolved into the ideas for this series was inspired by Philbert Yau and Chuck Rosipal, two talented and forthright students, who have since graduated from medical school. It has been a tremendous joy to work with my excellent coauthors, especially Dr. John Patlan, who exemplifies the qualities of the ideal physician—caring, empathetic, and avid teacher, and who is intellectually unparalleled. Dr. Patlan would like to acknowledge several excellent medical students from the University of Texas Medical School who thoughtfully reviewed many of the cases and offered detailed advice on how to improve this book: Adam Banks, Irving Basanez, Hubert Chodkiewicz, Stephen Fisher, Amber Gill, Matthew Hogue, Michael Holmes, Luke Martin, Colin Massey, and Janice Wilson.

I am greatly indebted to my editor, Catherine Johnson, whose exuberance, experience, and vision helped to shape this series. I appreciate McGraw-Hill's believing in the concept of teaching through clinical cases. I am also grateful to Catherine Saggese for her excellent production expertise, and Cindy Yoo for her wonderful editing. I cherish the ever-organized and precise Ridhi Mathur project manager. It has been a privilege and honor to work with one of the brightest medical students I have encountered, Molly Dudley who was the principal student reviewer of this book. She enthusiastically provided feedback and helped to emphasize the right material. I appreciate Linda Bergstrom for her sage advice and support. At Methodist, I appreciate Drs. Judy Paukert, Dirk Sostman, Marc Boom, and Alan Kaplan who have welcomed our residents; Debby Chambers, a brilliant administrator and Linda Elliott, who holds the department together. Without my dear colleagues, Drs. Konrad Harms, Priti Schachel, and Gizelle Brooks Carter, this book could not have been written. Most of all, I appreciate my ever-loving wife Terri, and our four wonderful children, Andy, Michael, Allison, and Christina, for their patience and understanding.

Eugene C. Toy

Mastering the cognitive knowledge within a field such as internal medicine is a formidable task. It is even more difficult to draw on that knowledge, procure and filter through the clinical and laboratory data, develop a differential diagnosis, and, finally, to make a rational treatment plan. To gain these skills, the student learns best at the bedside, guided and instructed by experienced teachers, and inspired toward self-directed, diligent reading. Clearly, there is no replacement for education at the bedside. Unfortunately, clinical situations usually do not encompass the breadth of the specialty. Perhaps the best alternative is a carefully crafted patient case designed to stimulate the clinical approach and the decision-making process. In an attempt to achieve that goal, we have constructed a collection of clinical vignettes to teach diagnostic or therapeutic approaches relevant to internal medicine.

Most importantly, the explanations for the cases emphasize the mechanisms and underlying principles, rather than merely rote questions and answers. This book is organized for versatility: it allows the student "in a rush" to go quickly through the scenarios and check the corresponding answers, and it allows the student who wants thought-provoking explanations to obtain them. The answers are arranged from simple to complex: the bare answers, an analysis of the case, an approach to the pertinent topic, a comprehension test at the end, clinical pearls for emphasis, and a list of references for further reading. The clinical vignettes are purposely placed in random order to simulate the way that real patients present to the practitioner. A listing of cases is included in Section III to aid the student who desires to test his/her knowledge of a certain area, or to review a topic, including basic definitions. Finally, we intentionally did not use a multiple choice question format in the case scenarios, because clues (or distractions) are not available in the real world.

HOW TO GET THE MOST OUT OF THIS BOOK

Each case is designed to simulate a patient encounter with open-ended questions. At times, the patient's complaint is different from the most concerning issue, and sometimes extraneous information is given. The answers are organized into four different parts:

CLINICAL CASE FORMAT: PART I

1. **Summary:** The salient aspects of the case are identified, filtering out the extraneous information. Students should formulate their summary from the case before looking at the answers. A comparison to the summation in the answer will help to improve their ability to focus on the important data, while appropriately discarding the irrelevant information—a fundamental skill in clinical problem solving.
2. **A Straightforward Answer** is given to each open-ended question.

3. The **Analysis of the Case** is comprised of two parts:
   a. **Objectives of the Case:** A listing of the two or three main principles that are crucial for a practitioner to manage the patient. Again, the students are challenged to make educated "guesses" about the objectives of the case upon initial review of the case scenario, which helps to sharpen their clinical and analytical skills.
   b. **Considerations:** A discussion of the relevant points and brief approach to the specific patient.

PART II

Approach to the Disease Process: It consists of two distinct parts:

a. **Definitions:** Terminology pertinent to the disease process.
b. **Clinical Approach:** A discussion of the approach to the clinical problem in general, including tables, figures, and algorithms.

PART III

Comprehension Questions: Each case contains several multiple-choice questions, which reinforce the material, or which introduce new and related concepts. Questions about material not found in the text will have explanations in the answers.

PART IV

Clinical Pearls: Several clinically important points are reiterated as a summation of the text. This allows for easy review, such as before an examination.

CONTENTS

SECTION I

How to Approach Clinical Problems

Part 1. Approach to the Patient

The transition from the textbook or journal article to the clinical situation is one of the most challenging tasks in medicine. Retention of information is difficult; organization of the facts and recall of a myriad of data in precise application to the patient is crucial. The purpose of this text is to facilitate in this process. The first step is gathering information, also known as establishing the database. This includes taking the history (asking questions), performing the physical examination, and obtaining selective laboratory and/or imaging tests. Of these, the historical examination is the most important and useful. Sensitivity and respect should always be exercised during the interview of patients.

CLINICAL PEARL

- The history is the single most important tool in obtaining a diagnosis. All physical findings and laboratory and imaging studies are first obtained and then interpreted in the light of the pertinent history.

HISTORY

1. **Basic information:** Age, gender, and ethnicity must be recorded because some conditions are more common at certain ages; for instance, pain on defecation and rectal bleeding in a 20-year-old may indicate inflammatory bowel disease, whereas the same symptoms in a 60-year-old would more likely suggest colon cancer.

2. **Chief complaint:** What is it that brought the patient into the hospital or clinic? Is it a scheduled appointment, or an unexpected symptom? The patient's own words should be used if possible, such as, "I feel like a ton of bricks are on my chest." The chief complaint, or real reason for seeking medical attention, may not be the first subject the patient talks about (in fact, it may be the last thing), particularly if the subject is embarrassing, such as a sexually transmitted disease, or highly emotional, such as depression. It is often useful to clarify exactly what the patient's concern is, for example, they may fear their headaches represent an underlying brain tumor.

3. **History of present illness:** This is the most crucial part of the entire database. The questions one asks are guided by the differential diagnosis one begins to consider the moment the patient identifies the chief complaint, as well as the clinician's knowledge of typical disease patterns and their natural history. The duration and character of the primary complaint, associated symptoms, and exacerbating/relieving factors should be recorded. Sometimes, the history will be convoluted and lengthy, with multiple diagnostic or therapeutic interventions at different locations. For patients with chronic illnesses, obtaining prior medical records is invaluable. For example, when extensive evaluation of a complicated medical problem has been done elsewhere, it is usually better to first

obtain those results than to repeat a "million-dollar workup." When reviewing prior records, it is often useful to review the primary data (eg, biopsy reports, echocardiograms, serologic evaluations) rather than to rely upon a diagnostic label applied by someone else, which then gets replicated in medical records and by repetition, acquires the aura of truth, when it may not be fully supported by data. Some patients will be poor historians because of dementia, confusion, or language barriers; recognition of these situations and querying of family members is useful. When little or no history is available to guide a focused investigation, more extensive objective studies are often necessary to exclude potentially serious diagnoses.

4. **Past history:**
   a. **Illness:** Any illnesses such as hypertension, hepatitis, diabetes mellitus, cancer, heart disease, pulmonary disease, and thyroid disease should be elicited. If an existing or prior diagnosis is not obvious, it is useful to ask exactly how it was diagnosed; that is, what investigations were performed. Duration, severity, and therapies should be included.
   b. **Hospitalization:** Any hospitalizations and emergency room (ER) visits should be listed with the reason(s) for admission, the intervention, and the location of the hospital.
   c. **Blood transfusion:** Transfusions with any blood products should be listed, including any adverse reactions.
   d. **Surgeries:** The year and type of surgery should be elucidated and any complications documented. The type of incision and any untoward effects of the anesthesia or the surgery should be noted.

5. **Allergies:** Reactions to medications should be recorded, including severity and temporal relationship to the medication. An adverse effect (such as nausea) should be differentiated from a true allergic reaction.

6. **Medications:** Current and previous medications should be listed, including dosage, route, frequency, and duration of use. Prescription, over-the-counter, and herbal medications are all relevant. Patients often forget their complete medication list; thus, asking each patient to bring in all their medications—both prescribed and nonprescribed—allows for a complete inventory.

7. **Family history:** Many conditions are inherited, or are predisposed in family members. The age and health of siblings, parents, grandparents, and others can provide diagnostic clues. For instance, an individual with first-degree family members with early onset coronary heart disease is at risk for cardiovascular disease.

8. **Social history:** This is one of the most important parts of the history in that the patient's functional status at home, social and economic circumstances, and goals and aspirations for the future are often the critical determinant in what the best way to manage a patient's medical problem is. Living arrangements, economic situations, and religious affiliations may provide important clues for puzzling diagnostic cases, or suggest the acceptability of various diagnostic or therapeutic options. Marital

status and habits such as alcohol, tobacco, or illicit drug use may be relevant as risk factors for disease.

9. **Review of systems:** A few questions about each major body system ensure that problems will not be overlooked. The clinician should avoid the mechanical "rapid-fire" questioning technique that discourages patients from answering truthfully because of fear of "annoying the doctor."

PHYSICAL EXAMINATION

The physical examination begins as one is taking the history, by observing the patient and beginning to consider a differential diagnosis. When performing the physical examination, one focuses on body systems suggested by the differential diagnosis, and performs tests or maneuvers with specific questions in mind; for example, does the patient with jaundice have ascites? When the physical examination is performed with potential diagnoses and expected physical findings in mind ("one sees what one looks for"), the utility of the examination in adding to diagnostic yield is greatly increased, as opposed to an unfocused "head-to-toe" physical.

1. **General appearance:** A great deal of information is gathered by observation, as one notes the patient's body habitus, state of grooming, nutritional status, level of anxiety (or perhaps inappropriate indifference), degree of pain or comfort, mental status, speech patterns, and use of language. This forms your impression of "who this patient is."

2. **Vital signs:** Vital signs like temperature, blood pressure, heart rate, respiratory rate, height, and weight are often placed here. Blood pressure can sometimes be different in the two arms; initially, it should be measured in both arms. In patients with suspected hypovolemia, pulse and blood pressure should be taken in lying and standing positions to look for orthostatic hypotension. It is quite useful to take the vital signs oneself, rather than relying upon numbers gathered by ancillary personnel using automated equipment, because important decisions regarding patient care are often made using the vital signs as an important determining factor.

3. **Head and neck examination:** Facial or periorbital edema and pupillary responses should be noted. Funduscopic examination provides a way to visualize the effects of diseases such as diabetes on the microvasculature; papilledema can signify increased intracranial pressure. Estimation of jugular venous pressure is very useful to estimate volume status. The thyroid should be palpated for a goiter or nodule, and carotid arteries auscultated for bruits. Cervical (common) and supraclavicular (pathologic) nodes should be palpated.

4. **Breast examination:** Inspect for symmetry and for, skin or nipple retraction with the patient's hands on her hips (to accentuate the pectoral muscles) and also with arms raised. With the patient sitting and supine, the breasts should then be palpated systematically to assess for masses. The nipple should be assessed for discharge, and the axillary and supraclavicular regions should be examined for adenopathy.

5. **Cardiac examination:** The point of maximal impulse (PMI) should be ascertained for size and location, and the heart auscultated at the apex of the heart as well as at the base. Heart sounds, murmurs, and clicks should be characterized. Murmurs should be classified according to intensity, duration, timing in the cardiac cycle, and changes with various maneuvers. Systolic murmurs are very common and often physiologic; diastolic murmurs are uncommon and usually pathologic.

6. **Pulmonary examination:** The lung fields should be examined systematically and thoroughly. Wheezes, rales, rhonchi, and bronchial breath sounds should be recorded. Percussion of the lung fields may be helpful in identifying the hyperresonance of tension pneumothorax, or the dullness of consolidated pneumonia or a pleural effusion.

7. **Abdominal examination:** The abdomen should be inspected for scars, distension, or discoloration (such as the Grey Turner sign of discoloration at the flank areas indicating intraabdominal or retroperitoneal hemorrhage). Auscultation of bowel sounds to identify normal versus high-pitched and hyperactive versus hypoactive. Percussion of the abdomen can be utilized to assess the size of the liver and spleen, and to detect ascites by noting shifting dullness. Careful palpation should begin initially away from the area of pain, involving one hand on top of the other, to assess for masses, tenderness, and peritoneal signs. Tenderness should be recorded on a scale (eg, 1-4 where 4 is the most severe pain). Guarding, and whether it is voluntary or involuntary, should be noted.

8. **Back and spine examination:** The back should be assessed for symmetry, tenderness, and masses. The flank regions are particularly important to assess for pain on percussion, which might indicate renal disease.

9. **Genitalia:**
   a. **Females:** The pelvic examination should include an inspection of the external genitalia, and with the speculum, evaluation of the vagina and cervix. A pap smear and/or cervical cultures may be obtained. A bimanual examination to assess the size, shape, and tenderness of the uterus and adnexa is important.
   b. **Males:** An inspection of the penis and testes is performed. Evaluation for masses, tenderness, and lesions is important. Palpation for hernias in the inguinal region with the patient coughing to increase intraabdominal pressure is useful.

10. **Rectal examination:** A digital rectal examination is generally performed for those individuals with possible colorectal disease, or gastrointestinal bleeding. Masses should be assessed, and stool for occult blood should be tested. In men, the prostate gland can be assessed for enlargement and for nodules.

11. **Extremities:** An examination for joint effusions, tenderness, edema, and cyanosis may be helpful. Clubbing of the nails might indicate pulmonary diseases such as lung cancer or chronic cyanotic heart disease.

12. **Neurologic examination:** Patients who present with neurologic complaints usually require a thorough assessment, including the mental status, cranial nerves, motor strength, sensation, and reflexes.

13. **Skin examination:** The skin should be carefully examined for evidence of pigmented lesions (melanoma), cyanosis, or rashes that may indicate systemic disease (malar rash of systemic lupus erythematosus).

LABORATORY AND IMAGING ASSESSMENT

1. **Laboratory:**
   a. **Complete blood count** (CBC): To assess for anemia and thrombocytopenia.
   b. **Serum chemistry:** Chemistry panel is most commonly used to evaluate renal and liver function.
   c. **Lipid panel:** Lipid panel is particularly relevant in cardiovascular diseases.
   d. **Urinalysis:** Urinalysis is often referred to as a "liquid renal biopsy," because the presence of cells, casts, protein, or bacteria provides clues about underlying glomerular or tubular diseases.
   e. **Infection:** Gram stain and culture of urine, sputum, and cerebrospinal fluid, as well as blood cultures, are frequently useful to isolate the cause of infection.

2. **Imaging procedures:**
   a. **Chest radiography:** Chest radiography is extremely useful in assessing cardiac size and contour, chamber enlargement, pulmonary vasculature and infiltrates, and the presence of pleural effusions.
   b. **Ultrasonographic examination:** Ultrasonographic examination is useful for identifying fluid-solid interfaces, and for characterizing masses as cystic, solid, or complex. It is also very helpful in evaluating the biliary tree, kidney size, and evidence of ureteral obstruction, and can be combined with Doppler flow to identify deep venous thrombosis. Ultrasonography is noninvasive and has no radiation risk, but cannot be used to penetrate through bone or air, and is less useful in obese patients.

CLINICAL PEARL

► Ultrasonography is helpful in evaluating the biliary tree, looking for ureteral obstruction, and evaluating vascular structures, but has limited utility in obese patients.

   c. **Computed tomography:** Computed tomography (CT) is helpful in possible intracranial bleeding, abdominal and/or pelvic masses, and pulmonary processes, and may help to delineate the lymph nodes and retroperitoneal disorders. CT exposes the patient to radiation and requires the patient to be immobilized during the procedure. Generally, CT requires administration of a radiocontrast dye, which can be nephrotoxic.