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全国高等学校临床医学专业卫生部规划教材英文版

案例分析系列

# 外 科 学

Case Files™

Surgery

第 2 版

原 著 Toy • Liu • Campbell

中文主编 陈孝平

 人民卫生出版社

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## 第 2 版

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案例分析系列

# 出版说明

为贯彻教育部、卫生部关于加强双语教学的精神，配合全国各医学院校开展双语教学的需要以及适应以问题为中心的教学发展趋势，人民卫生出版社特引进了本套案例分析系列英文教材。该教材原版由美国麦格劳希尔教育出版集团出版，在美国各大医学院使用后反响良好。

书中通过剖析临床实例对相关的临床或基础知识进行回顾和复习，有助于医学生将医学基础知识和临床实践相结合。这种以问题为中心的学习(PBL)模式强调发挥学生主动思考的潜力，培养其自我学习能力。在编排上，作者有意将案例顺序随机化，目的是模拟真正的患者就医情景。为方便查询，书后附有以字母为序的案例排列索引。

加入中文编注后的案例分析系列基本保持原书风貌，并根据我国国内教学情况对重要知识点和词汇进行了点评和加注。本套教材语言叙述通俗、简练，既可加强读者对医学知识的理解，又可学习医学英语。

本系列首批教材包括12本：临床医学6本(内科学、外科学、妇产科学、儿科学、精神病学、急诊医学)，基础医学6本(解剖学、生理学、生物化学、微生物学、病理学、药理学)，将于2007年全部推出。

# 前 言

为了提高我国医学生英语水平、培养其临床能力及自学能力，人民卫生出版社从美国 McGraw-Hill 公司引进《Case files:Surgery》一书，对其进行中文注释后出版。该书共 53 章，每章均为一个病例，基本覆盖了外科领域的常见疾病。其在编排上不同于传统教科书：均以病人临床表现引出，然后提出 2~3 个问题，再针对问题进行分析，阐述相关知识点，最后进行总结，并配有复习题。这种模式符合当前 PBL 教学模式的原则，有助于培养学生的临床思维，是对现有外科学教材的有益补充。

为了保证本书的质量，我们组织了国内十余所综合大学医学部或医学院具有丰富临床工作和教学经验的专家对该书进行了中文注释。其原则是让读者在不使用英文字典的前提下能够基本掌握原文内容。注释包括两个部分：1. 英文词汇注解；2. 相关临床背景、知识点介绍。目的是尽量保持原文特色，同时又帮助读者全面理解、掌握其内容及精髓。

本书适合高等医学院校五年制、七年制及八年制医学生或外科学研究生使用。

本书在编写过程中得到了裘法祖院士及编者所在各院校领导的大力支持，在此表示衷心感谢！

由于我们水平所限，本书的注释难免存在一些错误或不准确之处，敬请广大读者批评指正！

陈孝平

2007 年 7 月



## INTRODUCTION

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Mastering the cognitive knowledge within a field such as general surgery 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 form a rational treatment plan. To gain these skills, the student often 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 decision making. In an attempt to achieve this goal, we have constructed a collection of clinical vignettes to teach diagnostic or therapeutic approaches relevant to general surgery. 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: 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 thought-provoking explanations. The answers are arranged from simple to complex: a summary of the pertinent points, the bare answers, an analysis of the case, an approach to the topic, a comprehension test at the end for reinforcement and emphasis, and a list of resources for further reading. The clinical vignettes are purposely arranged in randomly in 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 or her knowledge of a certain area or to review a topic, including basic definitions. Finally, we intentionally did not primarily use a multiple-choice question format because clues (or distractions) are not available in the real world. 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 simulate a patient encounter and includes open-ended questions. At times, the patient’s complaint differs from the issue of most concern, and sometimes extraneous information is given. The answers are organized into four different parts:

## PART I

1. **Summary:** The salient aspects of the case are identified, filtering out the extraneous information. The student should formulate his or her summary from the case before looking at the answers. A comparison with the summation in the answer helps to improve one's ability to focus on the important data while appropriately discarding irrelevant information, a fundamental skill required in clinical problem solving.
2. A **straightforward answer** is given to each open-ended question.
3. An **analysis of the case**, which consists of two parts:
  - a. **Objectives:** A listing of the two or three main principles that are crucial for a practitioner in treating a patient. Again, the student is challenged to make educated "guesses" about the objectives of the case after an initial review of the case scenario, which helps to sharpen his or her clinical and analytical skills.
  - b. **Considerations:** A discussion of the relevant points and a brief approach to a **specific** patient.

## PART II

An **approach to the disease process**, consisting 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 includes several multiple-choice questions, that reinforce the material or introduce new and related concepts. Questions about material not found in the text are explained in the answers.

## PART IV

**Clinical Pearls:** A listing of several clinically important points, which are reiterated as a summation of the text and to allow for easy review, such as before an examination.

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SECTION I

# How to Approach Clinical Problems

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Part 1. Approach to the Patient

Part 2. Approach to Clinical Problem Solving

Part 3. Approach to Reading



## PART 1. APPROACH TO THE PATIENT

The transition from textbook or journal article learning to an application of the information in a specific clinical situation is one of the most challenging tasks in medicine. It requires retention<sup>①</sup> of information, organization of the facts, and recall of a myriad<sup>②</sup> of data with precise application to the patient. The purpose of this text is to facilitate this process. The first step is gathering information, also known as establishing the database. This includes recording the patient's history; performing the physical examination; and obtaining selective laboratory examinations, special evaluations such as breast ductograms<sup>③</sup>, and/or imaging tests. Of these, the historical examination is the most important and most useful. Sensitivity and respect should always be exercised during the interview of patients.

### CLINICAL PEARL



The history is usually the single most important tool in reaching a diagnosis. The art of obtaining this information in a nonjudgmental, sensitive, and thorough manner cannot be overemphasized.

### History

1. Basic information:
  - a. Age: must be recorded because some conditions are more common at certain ages; for instance, age is one of the most important risk factors for the development of breast cancer.
  - b. Gender: some disorders are more common in or found exclusively in men such as prostatic hypertrophy and cancer. In contrast, women more commonly have autoimmune problems such as immune thrombocytopenia purpura<sup>④</sup> and thyroid nodules. Also, the possibility of pregnancy must be considered in any woman of childbearing age.
  - c. Ethnicity: some disease processes are more common in certain ethnic groups (such as diabetes mellitus in the Hispanic population<sup>⑤</sup>).

### CLINICAL PEARL



The possibility of pregnancy must be entertained in any woman of childbearing age.

2. Chief complaint: What is it that brought the patient into the hospital or office? Is it a scheduled<sup>Ⓔ</sup> appointment or an unexpected symptom such as abdominal pain or hematemesis<sup>Ⓙ</sup>? The duration and character of the complaint, associated symptoms, and exacerbating and/or relieving factors should be recorded. The chief complaint engenders a differential diagnosis, and the possible etiologies should be explored by further inquiry.

### CLINICAL PEARL



The first line of any surgical presentation should include **age**, **ethnicity**, **gender**, and **chief complaint**. Example: A 32-year-old Caucasian<sup>Ⓢ</sup> male complains of lower abdominal pain over an 8-hour duration.

3. Past medical history:
  - a. Major illnesses such as hypertension, diabetes, reactive airway disease, congestive heart failure, and angina<sup>Ⓣ</sup> should be detailed.
    - i. Age of onset, severity, end-organ involvement.
    - ii. Medications taken for a particular illness, including any recent change in medications and the reason for the change.
    - iii. Last evaluation of the condition (e. g., When was the last echocardiogram performed in a patient with congestive heart failure?)
    - iv. Which physician or clinic is following the patient for the disorder?
  - b. Minor illnesses such as a recent upper respiratory tract infection may impact on the scheduling of elective surgery.
  - c. Hospitalizations no matter how trivial should be detailed.
4. Past surgical history: Date and type of procedure performed, indication, and outcome. Laparoscopy versus laparotomy should be distinguished. Surgeon, hospital name and location should be listed. This information should be correlated with the surgical scars on the patient's body. Any complications should be delineated, including anesthetic complications, difficult intubations<sup>Ⓤ</sup>, and so on.
5. Allergies: Reactions to medications should be recorded, including severity and temporal relationship to administration of medication. Immediate hypersensitivity should be distinguished from an adverse reaction.
6. Medications: A list of medications, including dosage, route of administration and frequency, and duration of use should be developed. Prescription<sup>Ⓟ</sup>, over-the-counter, and herbal remedies<sup>Ⓡ</sup> are all relevant.
7. Social history: Marital status, family support, alcohol use, use or abuse of illicit

- drugs, and tobacco use, and tendencies<sup>ⓑ</sup> toward depression or anxiety are important.
8. Family history: Major medical problems, genetically transmitted disorders such as breast cancer, and important reactions to anesthetic medications, such as malignant hyperthermia (an autosomal dominant transmitted disorder<sup>‡1</sup>) should be explored.
  9. Review of systems: A system review should be performed focusing on the more common diseases. For example, in a young man with a testicular<sup>ⓑ</sup> mass, trauma to the area, weight loss, neck masses, and lymphadenopathy<sup>ⓑ</sup> are important. In an elderly woman, symptoms suggestive of cardiac disease should be elicited, such as chest pain, shortness of breath, fatigue, weaknesses, and palpitations.

### CLINICAL PEARL

❖ Malignant hyperthermia is a rare condition inherited in an autosomal dominant fashion. It is associated with a rapid rise in temperature up to 40.6°C (105°F), usually on induction by general anesthetic agents such as succinylcholine and halogenated inhalant gases. Prevention is the best treatment.

### Physical Examination

1. General appearance: Note whether the patient is cachectic versus well nourished<sup>ⓑ</sup>, anxious versus calm, alert versus obtunded.
2. Vital signs: Record the temperature, blood pressure, heart rate, and respiratory rate. Height and weight are often included here. For trauma patients, the Glasgow Coma Scale (GCS)<sup>‡2</sup> is important.
3. Head and neck examination: Evidence of trauma, tumors, facial edema, goiter and thyroid nodules, and carotid bruits<sup>ⓑ</sup> should be sought. With a closed head injury, pupillary reflexes and unequal pupil sizes are important. Cervical and supraclavicular nodes should be palpated.
4. Breast examination: Perform an inspection for symmetry and for skin or nipple retraction with the patient's hands on her hips (to accentuate<sup>ⓑ</sup> the pectoral muscles) and with her arms raised. With the patient supine, the breasts should be palpated systematically to assess for masses. The nipples should be assessed for discharge, and the axillary and supraclavicular regions<sup>ⓑ</sup> should be examined for adenopathy<sup>ⓑ</sup>.
5. Cardiac examination: The point of maximal impulse should be ascertained<sup>ⓑ</sup>, and the heart auscultated at the apex as well as at the base. Heart sounds, murmurs, and clicks should be characterized. Systolic flow murmurs are fairly common in pregnant women because of the increased cardiac output, but significant diastolic murmurs are unusual.

6. Pulmonary examination: The lung fields should be examined systematically and thoroughly. Wheezes, rales, rhonchi<sup>②</sup>, and bronchial breath sounds should be recorded.
7. Abdominal examination: The abdomen should be inspected for scars, distension, masses or organomegaly (i. e., spleen or liver), and discoloration. For instance, the Grey-Turner sign<sup>†3</sup> of discoloration on the flank areas may indicate an intra-abdominal or retroperitoneal hemorrhage. Auscultation<sup>③</sup> should be performed to identify normal versus high-pitched, and hyperactive versus hypoactive, bowel sounds. The abdomen should be percussed for the presence of shifting dullness (indicating ascites). 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 (e. g., 1 to 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, or masses. The flank regions are particularly important in assessing for pain on percussion that may indicate renal disease.
9. Genital examination:
  - a. **Female:** The external genitalia<sup>④</sup> should be inspected, and the speculum then used to visualize the cervix and vagina. A bimanual examination should attempt to elicit cervical motion tenderness, uterine size, and ovarian masses or tenderness.
  - b. **Male:** The penis should be examined for hypospadias<sup>⑤</sup>, lesions, and infection. The scrotum should be palpated for masses and, if present, transillumination<sup>⑥</sup> should be used to distinguish between solid and cystic masses. The groin region should be carefully palpated for bulging (hernias) on rest and on provocation (coughing). This procedure should optimally be repeated with the patient in different positions.
  - c. **Rectal examination:** A rectal examination can reveal masses in the posterior pelvis and may identify occult blood in the stool. In females, nodularity and tenderness in the uterosacral ligament may be signs of endometriosis. The posterior uterus and palpable masses in the cul-de-sac may be identified by rectal examination. In the male, the prostate gland should be palpated for tenderness, nodularity, and enlargement.
10. Extremities and skin: The presence of joint effusions, tenderness, skin edema, and cyanosis<sup>⑦</sup> should be recorded.
11. Neurologic examination: Patients who present with neurologic complaints usually re-

quire thorough assessments including evaluation of the cranial nerves, strength, sensation, and reflexes.

### CLINICAL PEARL

A thorough understanding of anatomy is important to optimally interpret the physical examination findings.

12. Laboratory assessment depends on the circumstances:
  - a. A complete blood count: to assess for anemia, leukocytosis (infection), and thrombocytopenia.
  - b. Urine culture or urinalysis: to assess for hematuria when ureteral stones, renal carcinoma, or trauma is suspected.
  - c. Tumor markers: for example, in testicular cancer,  $\beta$ -human chorionic gonadotropin,  $\alpha$ -fetoprotein, and lactate dehydrogenase values are often assessed.
  - d. Serum creatinine and serum urea nitrogen levels: to assess renal function, and aspartate aminotransferase (AST) and alanine aminotransferase (ALT) values to assess liver function.
13. Imaging procedures:
  - a. An ultrasound examination is the most commonly used imaging procedure to distinguish a pelvic process in female patients, such as pelvic inflammatory disease. It is also very useful in diagnosing gallstones and measuring the caliber of the common bile duct. It can also help to discern solid versus cystic masses.
  - b. Computed tomography (CT) is extremely useful in assessing fluid and abscess collections in the abdomen and pelvis. It can also help determine the size of lymph nodes in the retroperitoneal space.
  - c. Magnetic resonance imaging identifies soft tissue planes and may assist in assessing prolapsed lumbar nucleus pulposus and various orthopedic injuries.
  - d. Intravenous pyelography uses dye to assess the concentrating ability of the kidneys, the patency of the ureters, and the integrity of the bladder. It is also useful in detecting hydronephrosis, ureteral stones, and ureteral obstructions.

## PART 2. APPROACH TO CLINICAL PROBLEM SOLVING

There are typically four distinct steps that a clinician takes to systematically solve most clinical problems:

1. Making the diagnosis

2. Assessing the severity or stage of the disease
3. Proposing a treatment based on the stage of the disease
4. Following the patient's response to the treatment.

### **Making the Diagnosis**

A diagnosis is made by a careful evaluation of the database, analyzing the information, assessing the risk factors, and developing the list of possibilities (the differential diagnosis). Experience and knowledge help the physician to “key in” on the most important possibilities. A good clinician also knows how to ask the same question in several different ways and use different terminology<sup>®</sup>. For example, a patient may deny having been treated for “cholelithiasis” but answer affirmatively when asked if he has been hospitalized for “gallstones.” Reaching a diagnosis may be achieved by systematically reading about each possible cause and disease.

Usually a long list of possible diagnoses can be pared down to two or three that are the most likely, based on selective laboratory or imaging tests. For example, a patient who complains of upper abdominal pain *and* has a history of nonsteroidal anti-inflammatory drugs use may have peptic ulcer disease; another patient who has abdominal pain, fatty food intolerance, and abdominal bloating may have cholelithiasis. Yet another individual with a 1-day history of periumbilical<sup>®</sup> pain localizing to the right lower quadrant may have acute appendicitis.

### **CLINICAL PEARL**



The first step in clinical problem solving is **making the diagnosis**.

### **Assessing the Severity of the Disease**

After establishing the diagnosis, the next step is to characterize the severity of the disease process, in other words, describing “how bad” a disease is. With malignancy, this is done formally by staging the cancer. Most cancers are categorized from stage I (least severe) to stage IV (most severe). With some diseases, such as with head trauma, there is a formal scale (the GCS) based on the patient's eye-opening response, verbal response, and motor response.

### **CLINICAL PEARL**



The second step is to **establish the severity or stage of the disease**. There is usually prognostic or treatment significance based on the stage.



### Treating Based on the Stage

Many illnesses are stratified<sup>®</sup> according to severity because the prognosis and treatment often vary based on the severity. If neither the prognosis nor the treatment were affected by the stage of the disease process, there would be no reason to subcategorize<sup>®</sup> the illness as mild or severe. For example, obesity is subcategorized as moderate (body mass index [BMI] 35 to 40 kg/m<sup>2</sup>) or severe (BMI greater than 40 kg/m<sup>2</sup>), with different prognoses and recommended interventions. Surgical procedures for obesity such as gastric bypass are only generally considered when a patient has severe obesity and/or significant complications such as sleep apnea.

#### CLINICAL PEARL



**The third step in most cases is tailoring the treatment to the extent or stage of the disease.**

### Following the Response to Treatment

The final step in the approach to disease is to follow the patient's response to the therapy. The "measure" of response should be recorded and monitored. Some responses are clinical, such as improvement (or lack of improvement) in a patient's abdominal pain, temperature, or pulmonary examination. Other responses can be followed by imaging tests such as a CT scan to determine the size of a retroperitoneal mass in a patient receiving chemotherapy, or with a tumor marker such as the level of prostate-specific antigen in a male receiving chemotherapy for prostatic cancer. For a closed head injury, the GCS is used. The student must be prepared to know what to do if the measured marker does not respond according to what is expected. Is the next step to treat again, to reassess the diagnosis, to pursue a metastatic workup, or to follow up with another more specific test?

#### CLINICAL PEARL



**The fourth step is to monitor treatment response or efficacy, which can be measured in different ways. It may be symptomatic (the patient feels better) or based on a physical examination (fever), a laboratory test (prostate-specific antigen level), or an imaging test (size of a retroperitoneal lymph node on a CT scan).**

## PART 3. APPROACH TO READING

The clinical problem-oriented approach to reading is different from the classic "system-