

儿 科 学

Case Files™

Pediatrics

第 2 版

原 著 Toy • Girardet • Hormann • Lahoti

McNeese • Parks • Yetman

中文编者 王卫平 朱建幸

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

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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

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教材。该教材由美国麦格劳希尔教育出版集团推出，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)模式着重于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。

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7月全部推出。

前言

医学教育的重要特点是注重基础理论与临床实践的紧密结合，一个医学生即使对疾病的发生发展规律能够倒背如流，但是在临床工作时面对错综复杂的情况也可能手足无措，其原因不仅在于经验的不足，更可能是缺乏临床的思辨能力。培养医学生运用已经掌握的医学知识和临床技能来具体分析病情从而得出进一步诊断和治疗的方向，无疑是医学教育的重要方面。古人所谓育人之道“授之鱼不如授之渔”讲的就是不要将知识简单地拷贝给学生，而应该教会他们对知识的融会贯通，能够具体运用。儿科学的服务对象是儿童，临床工作的不同之处在于患者自述表达能力有限，病情的信息获得常不完善可靠，病情变化多且快，对临床工作者的思辨能力是一大挑战。为了帮助提高医学生的临床工作能力，我们编译了这本案例分析。当然，这本书对于儿科或其他学科的临床医师也是颇有助益的。

本书所列的案例涉及儿科学的各个方面，内容非常宽广；案例都取自临床比较常见的典型病例，然而诊断和治疗的方法都非常先进，比较贴近实际；对于案例的分析能够根据理论结合病情层层推进，提出诊断和治疗的依据和方向，逻辑性强。同时还通过提出问题和解答问题的方式对案例的特点进行重点阐述，有利于对疾病诊断、治疗和预防的深刻了解和鉴别。为了帮助读者正确理解英语的原文内容，我们对其中比较生僻的词汇作了翻译，对某些重要而难懂或与我国国情有所不同之处作了注释。此外，还对案例进行了简短精炼的点评，指出其中的关键问题。

希望此书能够在提高医学生的临床思辨能力和专业英语的阅读能力方面有所帮助。衷心欢迎同道们对此书的编译工作提出宝贵的意见和建议。

复旦大学上海医学院 王卫平

❖ INTRODUCTION

Mastering the cognitive knowledge within a field such as pediatrics 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 selfdirected, 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 simulate the clinical approach and decision-making. In an attempt to achieve that goal, we have constructed a collection of clinical vignettes to teach diagnostic or therapeutic approaches relevant to pediatrics. 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, while allowing the student who wants thought-provoking explanations to go at a more measured pace. 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 placed in random order to simulate the way that real patients present to the practitioner. Section III includes a listing of cases to aid the student who desires to test his or her knowledge of a certain area, or who wants 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 to introduce related topics.

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 with 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/her summary from the case before loo-

king 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 in clinical problem solving.

2. A **Straightforward Answer** is given to each open-ended question.
3. The **Analysis of the Case**, which 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 student is challenged to make educated "guesses" about the objectives of the case upon initial review of the case scenario, which helps to sharpen the student's 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: This process has two distinct parts:

1. **Definitions:** Terminology pertinent to the disease process.
2. **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 that either reinforce the material or introduce new and related concepts. Questions about material not found in the text have explanations in the answers.

PART IV:

Clinical Pearls: A listing of several clinically important points is reiterated as a summation of the text and placed at the end of each case to allow for easy review such as before an examination.

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SECTION I

How to Approach Clinical Problems

Part 1. Approaching the Patient

Part 2. Approaching Clinical Problem Solving

Part 3. Approaching Reading

PART 1. APPROACHING THE PATIENT

The transition from the textbook or journal article to the clinical situation is perhaps the most challenging in medicine. Retention of information is difficult; organization of the facts and recall of these myriad of data to apply to the patient is crucial. This text aids this process. The first step is gathering information, otherwise known as establishing the database. This consists of taking the history (asking questions), performing the physical examination, and obtaining selective laboratory and/or imaging tests.

The history is the single most important method of establishing a diagnosis. Depending on the age of the child, the information may be gathered solely from the parent, from both the parent and the child, or solely from the adolescent. The student should remember not to be misled by the diagnosis of another physician or by a family member. A statement such as "Johnnie has pneumonia and needs antibiotics" may or may not be correct; an astute clinician will keep an open mind and consider other possibilities, such as upper respiratory tract infection, aspirated foreign body, reactive airway disease, or even cystic fibrosis. The art of seeking the information in a nonjudgmental, sensitive, and thorough method cannot be overemphasized.

History

1. Basic information:

- a. **Age, gender, and ethnicity** are important because some childhood illnesses occur with increased regularity at various ages, with higher frequency in one gender, or, more commonly, in one ethnic group. For instance, anorexia nervosa is more common in white adolescent females, while complications of sickle cell anemia are more common in African American children of both genders.

2. **Chief complaint.** This is usually the response that the patient or the patient's family member gives to the question: "Why are you seeing the doctor today?"

3. **History of present illness.** The onset, duration, and intensity of the primary complaint, as well as associated symptoms, exacerbating and relieving factors, and previous attempts at therapy should be determined. For children, especially adolescents, a hidden agenda must be considered; **it is not uncommon for the adolescent to actually have questions about sexuality when the stated reason for the office visit is totally unrelated.** Both positive findings (the stool was loose, voluminous, and foul-smelling) and negative findings (without blood or mucous) are appropriate.

4. **Past history**

- a. **Pregnancy and delivery.** The age of the mother, the number of pregnancies,

the route of delivery, and the gestational age of the infant can often provide clues as to the etiology of pediatric conditions. For instance, a large, fullterm infant born by cesarean delivery who then develops an increased respiratory rate and streakiness on chest radiograph is more likely to have **transient tachypnea of the newborn** than is an infant born vaginally at 28-week gestation with similar symptoms. Similarly, a history of drug use (including over-the-counter, prescription, and illicit drugs) or infections during pregnancy should be obtained.

- b. **Neonatal history.** Any problems identified in the neonatal period, such as severe jaundice, infections, feeding difficulties, and prolonged hospitalization, should be reviewed, especially for the younger pediatric patients in whom residua of these problems may remain.
- c. **Surgical history.** When, where, and for what reason the surgery was performed should be explored. Complications should be noted.
- d. **Medical history.** While minor illnesses (such as occasional upper respiratory infections) can be reviewed quickly, more serious illnesses (such as diabetes mellitus) should be investigated fully. The age at diagnosis, treatments prescribed, and response to therapies can be reviewed. The number and nature of hospitalizations and complications are often important. For instance, a diabetic patient with frequent hospitalizations for ketoacidosis may indicate a lack of education of the family or underlying psychosocial issues complicating therapy. A child with a history of frequent, serious accidents should alert the physician of possible child abuse.
- e. **Developmental history.** For preschool children, a few questions about **language, fine motor, gross motor, and psychosocial skills** will provide good clues about development. For school-aged children, areas of strength and weaknesses are helpful.
5. **Allergies.** Reactions to medications should be recorded, including severity and temporal relationship to medications.
6. **Immunizations.** Dates for primary and booster series of immunizations should be recorded, preferably by reviewing the immunization cards. If the child is in school, a presumption that state laws regarding immunization completion can be made while the immunization card is being retrieved.
7. **Medications.** List the names of current medications, dosages, routes of administration and frequency, and durations of use. Prescription, over-the-counter, and herbal remedies are relevant.
8. **Sexual history of adolescents.** Details of an adolescent's sexual habits, contra-

ceptive use, pregnancies, and sexually transmitted diseases should be determined.

CLINICAL PEARL



The adolescent must be treated with sensitivity, respect, and confidentiality to foster the optimal environment for medical care.

9. **Family history.** Because many conditions are inherited, the ages and health of siblings, parents, grandparents, and others can provide important diagnostic clues. For instance, an obese child with a family history of adult-onset diabetes is at high risk of developing diabetes; early intervention is warranted.
10. **Social history.** Living arrangements, economic situations, type of insurance, and religious affiliations may provide important clues for a puzzling diagnostic case or suggest important information about the acceptability of therapeutic options.
11. **Review of systems.** A few questions about each of the major body systems allows the practitioner to ensure that no problems are overlooked and to obtain crucial history about related and unrelated medical conditions.

Physical Examination

1. **General appearance.** Well- versus poorly nourished; evidence of toxemia, including lethargy (defined as poor or absent eye contact and refusal to interact with environment), signs of poor perfusion, hypo- or hyperventilation, and cyanosis; or stigmata of syndromes (such as Down or Turner).
2. **Skin.** In smaller children, the color of the skin for evidence of pallor, plethora, jaundice, or cyanosis is important. Abnormalities such as capillary hemangiomas (such as "stork bites" in a newborn), café-au-lait, pigmented nevi (such as "mongolian spots"), erythema toxicum, or pustular melanosis can be identified. In older children, macules, papules, vesicles, pustules, wheals, and petechiae or purpura should be described, and evidence of excoriation, crust formation, desquamation, hyperpigmentation, ulceration, scar formation, or atrophy should be identified.
3. **Vital signs.** Temperature, blood pressure (generally begin routine measurement after 3 years), heart rate, respiratory rate, height, weight, and head circumference (generally measured until age 3 years). Measurements are plotted and compared to normals for age.
4. **Head, eyes, ears, nose, and throat.**
 - a. **Head.** For the neonate, the size of fontanelles and presence of overriding su-

tures, caput succedaneum (superficial edema or hematoma that crosses suture lines, usually located over crown), or cephalohematoma (hematoma that does not cross suture lines) should be noted. For the older child, the size and shape of the head as well as abnormalities such as swellings, depressions, or abnormal hair quality or distribution may be identified.

- b. **Eyes.** For infants, abnormalities in the size, shape, and position of the orbits, the color of the sclera (blue sclera, for instance, may indicate osteogenesis imperfecta), conjunctival hemorrhages or abnormalities, or the presence of iris defects (such as coloboma) may be found. The visual acuity of older children should also be obtained.
 - c. **Ears.** For all children, abnormalities in the size, shape, and position of the ears can provide important diagnostic clues. While tympanic membranes are difficult to assess in newborns, their integrity should be assessed in older children. For all children, the quality and character of discharge from the ear canal should be documented.
 - d. **Nose.** The size, shape, and position of the nose (in relation to the face and mouth) can provide diagnostic clues for various syndromes, such as a small nose in Down syndrome. Patency of the nostrils, especially in neonates who are obligate nose breathers, is imperative. Abnormalities of the nasal bridge or septum, integrity of the mucosa, and the presence of foreign bodies should be noted. A butterfly rash around the nose can be associated with systemic lupus erythematosus (SLE) and a transverse crease across the anterior portion of the nose is seen with allergic rhinitis.
 - e. **Mouth and throat.** The size, shape, and position of the mouth and lips in relation to other facial structures should be evaluated. In infants, common abnormalities of the mouth include disruption of the palate (cleft palate syndrome), Epstein pearls (a tiny white papule in the center of the palate), and short frenulum ("tongue-tied"). For all children, the size, shape, and position of the tongue and uvula must be considered. The number and quality of teeth for age should be assessed, and the buccal mucosa and pharynx should be examined for color, rashes, exudate, size of tonsils, and symmetry.
5. **Neck.** The neck in infants is usually short and sometimes hard to evaluate. Nonetheless, the size, shape, and preferred position of the neck can be evaluated for all children. The range of motion may be evaluated by gentle movement. Symmetry of the muscles, thyroid gland, veins, and arteries is important. Identification of an abnormal mass such as a thyroglossal duct cyst (midline above the level of the thyroid) or brachial cleft cyst (along the sternomastoid muscle), or unusual findings,

such as webbing in Turner syndrome, can be seen.

6. **Chest.** General examination of the chest should include an evaluation of the size and shape of the structures along with identification of obvious abnormalities (such as supernumerary nipples) or movement with respirations. **Respiratory rate varies according to age** and ranges from 40 to 60 breaths per minute in the neonate, to 12 to 14 breaths per minute in the toddler. **The degree of respiratory distress can be stratified with increasing distress noted when the child moves from subcostal to intercostal to supraclavicular to suprasternal retractions.** Palpation of the chest should confirm the integrity of the ribs and clavicles and any swelling or tenderness in the joints. Percussion in older children may reveal abnormalities, especially if asymmetry is noted. The chest should be auscultated for air movement, vocal resonance, rales, rhonchi, wheezes, and rubs. In adolescent girls symmetry of breast development and presence of masses or nipple discharge should be evaluated.
7. **Cardiovascular.** The precardium should be inspected for abnormal movements. The chest should be palpated for the location and quality of the cardiac impulse and to determine if a thrill is present. The presence and quality of the first and second heart sounds, including splitting with respirations should be noted. Murmurs, clicks, rubs, and abnormalities in rate (which varies by age) or rhythm should be identified. The peripheral perfusion, pulses, and color should be assessed.
8. **Abdominal examination.** The abdomen should be inspected to determine whether it is flat or protuberant, if masses or lesions such as striae are obvious, or if pulsations are present. In older children, the abdomen is usually flat, but in the neonate a very flat abdomen in a child with respiratory distress may indicate diaphragmatic hernia. The umbilicus, especially for neonates, should be evaluated for defects, drainage, or masses; a small umbilical hernia is often present and is normal. In the newborn, 1 umbilical vein and 2 umbilical arteries are normal. **In a neonate, palpation of the abdomen may reveal a liver edge about 2 cm below the costal margin, a spleen tip, and with deep pressure, kidneys.** In older children, these structures are not usually palpable except in pathology. Depending on the history, other masses must be viewed with suspicion for a variety of conditions. Bowel sounds are usually heard throughout the abdomen except in pathology. In adolescent females, the lower abdomen should be palpated for uterine enlargement (pregnancy).
9. **Genitalia.** Examination of the male for the size and shape of the penis, testicles, and scrotum is important. The position of the urethral opening should be assessed.

In newborn girls, the labia majora is usually large and completely encloses the labia minora; the genitalia is usually highly pigmented and swollen with an especially prominent clitoris. A white discharge is usually present in the first days of life, and occasionally a bloodtinged fluid is also seen. In toddlers, examination of the genitalia can be challenging. Placing the toddler in a frog-leg position while the toddler sits in the parent's lap (or on the examination table) often allows successful viewing of external genitalia. In older girls, the knee-chest position affords an excellent view of the external genitalia. In girls outside the newborn period, the labia minora are smaller compared to the remainder of the external genitalia, and the vaginal mucosa is red and appears thin. The hymen, which is just inside the introitus, should be inspected. Abnormalities of the hymen, such as imperforation or tags, vaginal discharge or foreign bodies, and labial adhesions, may be noted. A speculum examination should be performed for sexually active adolescent girls. Tanner staging for pubertal development should be done for both boys and girls. Inguinal hernias should be identified; normalcy of anus should be confirmed.

10. **Extremities.** For all children, the size, shape, and symmetry of the extremities should be considered; muscle strength should be evaluated. Joints may be investigated for range of motion, warmth, tenderness, and redness. Normalcy of gait for age should be reviewed. For infants, recognition of dislocated hips is of critical importance, as life-long growth abnormalities may result. In contrast, identification of scoliosis in adolescents is important to prevent the debilitating complications of that condition. Athletes require evaluation of the integrity of their joints, especially those to be used in sporting activities.
11. **Neurologic.** Neurologic evaluation of the older child is similar to that in adults. The level of consciousness and orientation is determined as a starting point. The cranial nerves should be assessed. The motor system should be evaluated (including strength, tone, coordination, and involuntary movements). Superficial and deep sensory systems, and deep tendon reflexes should be reviewed. **In younger, infants a variety of normal primitive reflexes (Moro, parachute, suck, grasp) can be found, but ensuring that these reflexes have extinguished by the appropriate age is equally important.**

Laboratory Assessment

The American Academy of Pediatrics recommends a few laboratory screening tests be accomplished for pediatric patients. These tests vary according to the child's age and risk factors.

1. **Newborn metabolic screening** is done in all states, usually after 24 hours of age,

but the exact tests performed vary by state. Conditions commonly screened for include hypothyroidism, phenylketonuria, galactosemia, hemoglobin type, and adrenal hyperplasia. Other conditions that may be assessed include maple syrup urine disease, homocystinuria, biotinidase deficiency, cystic fibrosis, tyrosinemia, and toxoplasmosis. Some states require a second newborn screen be performed after 7 days of age.

2. **Hemoglobin or hematocrits** are recommended for high-risk infants (especially premature infants and those with low birth weight), at 9 to 12 months of age, and yearly on all menstruating adolescents.
3. **Urinalyses** are recommended at 9 to 12 months of age and at 5 years of age, and dipstick urinalysis for leukocytes annually for sexually active adolescents.
4. **Lead screening** is done, especially in high-risk areas, at 9 to 12 months of age, and again at 2 years of age.
5. **Cholesterol screening** is performed in high-risk patients (those with positive family histories) older than 24 months of age.
6. **Sexually transmitted disease screening** is performed yearly on all sexually active patients.

Other, specialized testing is accomplished depending on the age, risk factors, chief complaint, and conditions included in the differential diagnosis.

Imaging Procedures

1. **Plain radiographs** offer the advantage of inexpensive testing that reveals global views of the anatomy. Unfortunately, fine organ detail is not revealed sometimes, requiring further radiographic study. Bone films for fracture, chest films for pneumonia, and abdomen films for ileus are common uses of this modality.
2. **Ultrasonography** is a fairly inexpensive modality that requires little or no sedation and has no radiation risks. It offers good organ and anatomic detail, but can be operator dependent. Not all organs are accessible to sonography. Common examinations include the head for intraventricular hemorrhage in the premature infant, the abdomen for such conditions as pyloric stenosis, and the kidneys for abnormal structure.
3. **Computer tomography** provides good organ and anatomic detail and is quick, but it is fairly expensive, may require contrast, and does involve radiation. Some children require sedation to complete the procedure. This test is often performed on the abdomen or head in trauma victims.
4. **Magnetic resonance imaging** is expensive but does not involve radiation. Because it is a slow procedure, sedation is often needed for younger children, and