GYNECOLOGIC DISORDERS

Differential Diagnosis and Therapy

Edited by

Carl J. Pauerstein, M.D.

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Philosophy and Procedures

This text presents clinical gynecology to the reader in the same context as clinical gynecology presents itself to the practicing physician. Many fine textbooks of gynecology have been written. In general, they present collections of gynecologic entities, describing the etiology, pathogenesis, clinical, and laboratory findings for each. This method of teaching has been utilized and validated with generations of physicians. However, it requires that the student, at any level, be able to synthesize concepts of differential diagnosis from the information presented. Synthesis is an absolute requirement because the diseases are discussed as individual entities, whereas patients present, not with labeled diseases, but with symptoms and signs. Thus, the gynecologist must be able to integrate, horizontally, clinical presentations learned as vertical entities.

There is a complementary method of teaching medicine, more venerable and equally validated, which is exemplified by preceptorial arrangements and residency training programs. It teaches by reasoning from the patient's presenting complaints and findings to the diagnosis. This is the method utilized in this book. We shall attempt to accomplish, in written format, what we do orally when instructing house officers and medical students. Before proceeding further, however, the reader should understand the philosophic and intellectual foundations on which this text will stand or fall.

WHAT IS THE SCIENTIFIC METHOD?

All sciences, no matter how different their contents and tools, use a universal method to undertake investigations and to evaluate the results of their inquiries. The same principles are used to evaluate evidence, to judge the adequacy of proposed explanations, and to decide between alternative hypotheses.[1] In the scientific setting, "Inference is the passage of thought from belief, or rational belief in a set of propositions collectively called the premises of the inference, to belief, or rational belief in a proposition called the conclusion of the inference" (p. 278).[2] Clinical medicine uses these same principles and methods. Consider the patient who presents with a complaint of fever, a cough productive of rusty sputum, and rales and rhonchi over the chest. The clinician progresses from listing each of these findings to the rational hypothesis that the patient has pneumonia. The reader should remember, however, that failure to reject a hypothesis is quite different from finding sufficient data to accept the hypothesis.

In this example, certain facts were selected for observation and recording. The patient might also have mentioned feeling lightheaded on occasion, noticing pain in the left great toe, or having diarrhea 2 weeks ago. Physical examination might have revealed other abnormal findings. This illustration from clinical medicine is congruent with a principle of general truth in scientific inquiry: investigators cannot possibly collect all available facts and thus must preselect those most likely to be pertinent to their hypotheses.[1] The scientific method, therefore, first requires selection of those facts to be observed and recorded. This selection, from the infinity of facts it is possible to observe, is of necessity based on an assumption of relevance to the problem.

After making this assumption about the relevant facts, the scientist formulates a preliminary hypothesis to account for the observed facts. The hypothesis is then tested for its concordance with observed empiric fact and for its congruence with other hypotheses whose agreement with observed fact has been established.[3] This inquiry must, of course, be controlled. Indeed, as Nagel notes, "by and large, the reliability of scientific conclusions is a function of the multiplicity and of the rigor of the controls to which such conclusions have been subjected" (p. 12).[1]

Once sufficient observations are made, the hypothesis is modified to explain the observed facts. Ideally, the hypothesis is then proven, and, if possible, subsumed under a more general hypothesis. The aim, thus, is to formulate generalizations about the conditions under which the occurrence of a specific event can be predicted. To return to the example discussed above, it can be inferred that over the years physicians observed that patients who presented with fever, cough, rusty sputum, and so on were suffering from a lung problem. Later, based on autopsies and microscopic studies, the lung pathology was described. Finally, with greater knowledge of microbiology, the causative agent was identified. As more patients with the same symptom complex were observed to have the same pathologic findings, the probability that a patient presenting with such findings would have pneumonia gained strength. Thus, when a patient such as the one in the example is seen, the physician hypothesizes that pneumonia is present. However, the hypothesis can never be formulated with certainty, but only with a certain degree of probability. This important concept of clinical diagnosis and treatment may be clarified by a further consideration of the certainty of formulation of scientific hypotheses.

Deductive Reasoning

Within the general scientific method, the certainty of formulation of hypotheses falls into one of two categories. The first, generally called *deductive reasoning* or *deduction*, asserts that there are certain universal laws and that whenever something occurs within these universal laws, we can, by applying the relevant laws, ascribe a specific cause to the event being considered. If the relevant laws are explicit, one can formalize a deductive argument that infers the occurrence of the event from a set of premises. The general statement is, If a certain event, C, always causes a specific event of another kind, E, then each and every occurrence of C will be accompanied by E.[4] For example, it could be said that every patient who presents with fever, cough, and rusty sputum and from whom gram-positive diplococci are isolated has pneumonia. This *could* be said, but it would not be true. Only a certain percentage of such patients actually have pneumonia.

In contrast, the universal laws of physical science always hold true. For example, when a copper rod is heated, it always increases in length. One can formalize the deductive argument as follows: All copper rods grow longer when their temperatures are raised. This is a copper rod. Therefore, it grows longer when its temperature is raised. In other words, all As are B. This is an A. Therefore, this is also a B. We can dismiss deductive arguments from further consideration, however, because they are not pertinent to clinical medicine.

Inductive Reasoning

Medical hypothesis formation and clinical diagnosis and treatment are governed by a second type of scientific reasoning usually called *inductive reasoning*. The general form of an inductive argument is as follows: If a certain hypothesis is true, then certain facts will be observable. These facts are now observable. Therefore, the hypothesis is probably true. Thus, instead of relying on universal laws, inductive reasoning relies on laws of probability. These laws state that under certain conditions, C, there is a certain probability, r, for the occurrence of an event, E, so that, in the long run, the proportion of instances of C that result in E will be r. Examples of such probabilistic laws in medical science are radioactive decay and some genetic phenomena.[4]

An inductive argument is more versatile than a deductive one, since it leads to a conclusion about information not intrinsic to the premises.[5] For this gain in versatility, a price is paid. Whereas the conclusion of a deductive argument follows inevitably from its premises, the conclusion of a sound inductive argument follows from its premises with only a certain probability.

In addition to this loss of certainty, inductive arguments are inherently unsound. The quandary that has not been satisfactorily resolved by scientific philosophers is termed the *inductive leap*. Inductive reasoning goes beyond the information contained in the premises to predict knowledge about the hitherto unknown. As can be demonstrated with the example of patients with pneumonia, physicians examine a series of individual patients and then say: every A that we have examined is a B, thus it is probable that all As are B. Obviously, the more As examined, the more likely the conclusion is true, but practical considerations force clinicians to limit the sample.

Probability and inductive reasoning are the scientific basis of clinical medicine. On philosophic grounds alone, therefore, the clinical arena can never yield the absolute conclusions achievable in the physical sciences. However, the greater the number of similar observations, the more likely the conclusions are correct.

IS MEDICINE AN ART OR A SCIENCE?

Having accepted our reasoning up to this point, one must also accept the need to know which diseases are common and which are rare. Serious students of medicine must, therefore, learn a great many facts and must be able to recall them readily. It is critical at every level of practice to know what is relevant in a given patient's presentation and to know, for confusing cases, which general areas of the literature to begin searching.

This necessity to assimilate a certain body of knowledge as a prerequisite to the practice of medicine was assailed during the 1970s by the notions, too glibly promulgated and too readily acquiesced to, that medicine is an art and that humanism and scientific knowledge are somehow incompatible. I shall attempt to dispell this myth at the outset so that the reader will accept the critical necessity of learning a great deal of information, on which all diagnostic efficiency must be based.

That applying medical information and diagnostic techniques to a patient's problem is done more artfully by some physicians than others is a clear and obvious truth. However, in this context, one must also affirm that physics, say, is an art. Einstein considered known experimental observations and, from his contemplations, evolved the special theory of relativity. Thus, his application of experimental phenomena to theoretical physics was unusually skillful. I must, however, take great exception to the belief that physicians practice medicine as an intuitive art in the way that some great musicians compose intuitively. To be kind, gentle, communicative, and understanding to a patient who is suffering and perhaps dying because of the doctor's ignorance does not, to me, bespeak humanism.

To practice good medicine, the physician must first learn and retain a body of information, including basic biomedical science. During any decade of practice, the clinically pertinent information influencing diagnosis and treatment changes. The physician will be able to assimilate these constant changes only by shifting, altering, replacing, and removing the basic blocks of information learned in medical school, which remain the foundations of clinical skills. Medicine is a science, the principles and methods of which can be artfully applied. A strong information base is critical to the good clinician.

HOW DO DISEASES PRESENT?

Diseases present by causing signs or symptoms that intrude on the patient's awareness. For example, a patient may notice blood on the sheets after coitus. The significance that she attributes to this observation and her subsequent reactions, including the promptness with which she seeks advice, are functions of her personality. The same reasoning applies to symptoms such as pain or other subjective sensations. Although the gynecologist must assess the complaints in the context of the patient's personality, he or she must also maintain an open mind and be nonjudgmental. The fact that one cannot explain a patient's complaints or that they do not fit into a known pattern does not mean that the patient is hysteric or neurotic. Similarly, psychotic patients are not immune to cancer, pelvic inflammatory disease, or ectopic pregnancy. It has become fashionable to seek psychiatric consultation when confronted by a patient with an apparent emotional overlay. As Feinstein has observed, "In such approaches, the physician deals with the disease, the psychiatrist deals with the person, and neither deals with the combination of person and disease that constitutes a patient" (p. 299).[6]

The clinician, having first listened to the patient, asks questions about areas that seem pertinent. The clinician should always ascertain why the patient chose this particular time to seek care, should define as precisely as possible the duration of each sign or symptom, and should establish carefully the sequence in which the various symptoms appeared.

The clinical manifestations of diseases usually form clusters of symptoms, physical findings, and laboratory findings. The clinician must try to identify those symptoms and findings that are likely to be relevant to the disease process. It is convenient to think of the primary and secondary symptoms and signs generated by a given disease. For example, vaginal bleeding is a primary sign of carcinoma of the endometrium but a secondary manifestation of tubal pregnancy. Thus, symptoms and signs can be viewed from two perspectives: When a patient has X disease, how often will symptom Y be seen? And when a patient has symptom Y, which diseases is she likely to have? The first question can be answered from collections of cases presented in the literature. The second is more difficult to answer and underlies both the frustration and excitement of clinical gynecology.

When physicians learn about a disease, they memorize its characteristic complex of historical and clinical findings. For example, gynocologists learn the classic pentad of symptoms found in the typical case of tubal pregnancy: abdominal pain, amenorrhea, abnormal vaginal bleeding, shoulder pain, and fainting. To utilize this information, gynecologists must know how frequently each of these symptoms are seen in patients who prove to have ectopic pregnancy. The frequencies are as follows: abdominal pain, more than 90 percent; amenorrhea, 80 percent; abnormal vaginal bleeding, 80 percent; shoulder pain, 20 percent; and fainting, 20 percent.[7] Thus, only 1 of 5 patients with ectopic pregnancy will display the full complex of classic symptoms. One problem in gynecologic diagnosis, then, is that diseases display only parts of their clinical spectra, depending on many things, including the physician's acuity, the patient's perceptions and communicative abilities, and the disease process itself. Thus, the physician may see only a part of the

typical picture, as in most patients with tubal pregnancy, where the only symptom almost always present is abdominal pain.

Confusion also occurs from the other direction, which is more pertinent to clinical gynecology. Patients do not arrive with a label of "ectopic pregnancy." They present with a symptom complex. The patient who presents with abdominal pain may be suffering from any one of a number of diseases. Clinicians view each symptom among a constellation of signs and symptoms. They then exclude those diseases unlikely to be present and list mentally in descending order of likelihood, those worthy of further consideration. They are making a bet—or formulating a hypothesis—that the patient is suffering from a given disease, based on past documentation of the diseases in patients with similar complexes of symptoms and signs. Thus, the entire complex of symptoms, including the chronology in which each appeared, must be evaluated on the way to a diagnosis. The examiner must decide which of the presenting symptoms are primary features of the underlying disease process and which are secondary.

In summary, there are five steps in the processing of a symptom: (1) the perception of the symptom by the patient, (2) the description of the symptom to the physician by the patient, (3) the physician's perception of this description, (4) the physician's interpretation and designation of his or her perception of the patient's description, and (5) inscription of this designation in the medical record by the physician.[6] Subjective qualifiers and modifiers are encountered at every step in these transactions.

PROCEDURES IN GYNECOLOGIC DIAGNOSIS

The next task is to apply the answers to the three questions discussed above to gynecologic diagnosis, as outlined in the following steps:

Step 1: Collect the data and select the facts most likely to be pertinent. It is convenient to restrict this portion of data collection to the information obtained from the initial history and the physical examination.

Step 2: Formulate the preliminary hypothesis.

Step 3: Make further observations designed to support or negate the preliminary hypothesis. Here ancillary data is utilized, such as laboratory findings or ancillary diagnostic procedures. Based on these secondary data, the history may be taken again, with the questions directed to a new focus.

Step 4: Modify the preliminary hypothesis in light of the total weight of the evidence and prove the new hypothesis.

Data Collection

History

While taking the history—indeed, from the first moment of greeting—the physician should observe the patient's general demeanor, apparent emotional state, general level of intelligence, and reliability. Physicians-in-training often dismiss from consideration those parts of the history that do not fit with their clinical impression. To make such a determination, a general impression of the patient's reliability as historian is necessary. If one considers the patient reliable, nothing that she states should be arbitrarily discarded because it does not fit an obvious pattern.

As the physician takes the history, he or she should try to identify the foremost symptom or symptoms and then formulate the possible cause of the symptoms. What are the possible causes? How may the symptoms relate to each other? The physician is simultaneously formulating an initial hypothesis, asking which of these causes are most

probably operative, and deciding how to proceed toward identifying the actual cause of the patient's symptoms.

It is preferable to proceed in classic fashion, beginning with the chief complaint. The physician can begin recording the history with a statement of age, parity, and last normal menstrual period (LNMP). The chief complaint should be recorded in the patient's own words. Certain questions must always be asked: How and when did the complaint begin? What is the character of the symptom? What is the location? How does it relate to various activities and functions? Are there remissions and exacerbations, and in what context? Furthermore, it is useful to ask why the patient chose this particular time to seek care. In other words, what, if anything, changed to motivate the patient to come to the physican. This is a particularly significant question if the chief complaint has been present for more than a few days.

After getting as much information as possible about the chief complaint, the physician proceeds to the history of the present illness (HPI). When taking the HPI, the physician should elicit a detailed description of every symptom that the patient thinks is related to the current illness. During this questioning, the physician begins a mental list of possible diagnoses. The focus of subsequent observations will be based on the impressions gleaned from the answers to these questions.

In taking the HPI, the gynecologist deviates from the standard format used by the internist. The patient is always asked when her last menstrual period (LMP) occurred and whether or not it was normal. The gynecologist needs to know whether the period began at the expected time and whether the flow appeared to be qualitatively and quantitatively normal. At the same time, the patient is questioned about the menstrual period prior to the LMP. Many patients tend to relate a variety of happenings to their menstrual periods. In determining the significance of these, the clinician must follow the general principle of the scientific method: select the relevant facts.

In general, the less experienced the examiner, the more likely that a confusing history, which deviates in many areas from a classic picture of disease, will be obtained. The ability to suppress extraneous information is a product of experience coupled with a strong information base. After learning all that one can about the present illness, the physician turns to the past medical history (PMH).

In taking the PMH, the examiner's focus should be guided by the impressions and tentative hypotheses formulated from the preliminary observations and the chief complaint and HPI. In gynecologic diagnosis, however, the examiner should routinely ask for certain information: the patient's menstrual and reproductive history, including age of menarche, interval between menses, duration of flow, presence of dysmenorrhea, and so on. In eliciting the reproductive history, the physician needs to ask about all previous pregnancies and their outcome. It is particularly important to ask about involuntary infertility. In doing so, one should elicit information about unprotected coitus. If a patient has been having unprotected coitus, but pregnancy was not her goal, she may not complain of involuntary infertility. However, the failure to conceive in the face of unprotected exposures is significant to the clinician. Physicians-in-training tend to omit certain questions that could provide valuable information. One should always ask how long the patient practiced unprotected coitus prior to her first conception and between pregnancies. The physician should also ascertain the age of the patient's youngest child, or the date of her last pregnancy, and whether contraception has been used since that time.

This information can provide valuable clues. For example, the classic PMH of women presenting with ectopic pregnancy includes a history of infertility prior to conception or of a long period of unprotected intercourse between the first pregnancy and the ectopic pregnancy. Similarly, if a patient has enjoyed normal fertility for two pregnancies and then experiences a relatively long period of involuntary infertility, one should suspect that something has changed since her last pregnancy. This could be a new partner, pelvic

inflammatory disease, endometriosis, anovulation, and so on. Such data guide one toward a diagnosis and toward proper emphases in the physical examination.

In addition to a detialed reproductive history, a thorough medical history should be taken. A patient often presents to, or is referred to, the gynecologist when her problems are really urologic, gastrointestinal, or emotional. In obscure cases, the physician can ask, What would I suspect if I heard the same story from a man?

After completing the PMH, the physician begins the review of systems (ROS). Here again it is wise to do a thorough general systems review, being alert to the unexpected. Careful inquiries should be made about such symptoms as pelvic pain, pelvic relaxation, stress incontinence, and vaginal discharge; these might offer clues to the origin of the present illness. Emphasis should be placed on those areas suggested by the information previously elicited. For example, if the patient complains of vaginal bleeding, she should be carefully questioned about any history of hemorrhagic manifestations, such as bleeding associated with dental extractions and easy bruising. A significant number of patients who present with a complaint of abnormal vaginal bleeding, in whom the pelvic examination reveals no abnormalities, may be bleeding as the result of a systemic illness.[8,9]

It is good practice to continue the history taking by inquiring about the patient's personal history and social habits. Finally, the physician should record the family history, emphasizing areas suggested by the responses to preceding inquiries.

Physical Examination

After completing the history, the physician has formed a tentative hypothesis. Then, during the physical examination, attention is directed toward those areas that the history suggests are probably foci of pathology. Here, another pitfall must be anticipated and guarded against. Problems can be made much more interesting—and baffling—by spurious physical findings.

A complete physical examination should be performed on all patients seen for the first time, regardless of the working hypothesis. The general examination begins with a recording of the vital signs, followed by a careful general inspection. The examination then proceeds from the head to the extremities. Particular emphasis should be placed on examination of the breasts, abdomen, and pelvis. Generally, the pelvic and rectal examinations can be done after the general physical has been completed.

The examination of the head, neck, heart, and lungs and the initial examination of the breasts can usually be performed with the patient sitting up. She is then asked to recline for further examination of the breasts, abdomen, and pelvis.

Breast examination entails inspection and palpation. The patient sits, unclothed to the waist, with her arms at her sides. The breasts are inspected for retraction of any area of skin, especially the nipple. Lumps, signs of inflammation, or changes in the appearance of the skin are noted. The patient is then asked to raise her arms above her head, and the inspection is repeated. This maneuver often makes areas of retraction more obvious.

After the patient reclines for further examination, the breasts are palpated by quadrants. It is useful to always follow the same order of palpation, such as upper inner quadrant, upper outer quadrant, lower inner quadrant, lower outer quadrant. The nipple and the areolar region are palpated next, and an attempt is made to express any secretion. Finally, the axillae are carefully palpated in search of enlarged or tender lymph nodes.

The physician then begins abdominal examination by inspecting the abdomen, looking for distention, scars, or hernias. The patient is then asked to raise her head against resistance, which helps to detect hernias. Next the abdomen is palpated, using the flat of the hand. In patients complaining of pain in a given area, the physician should begin palpation far from that area and palpate the area in question last. For deep palpation, the

two-handed method, where one hand is superimposed on the other, is preferable. Pressure is exerted by both hands, allowing the palpating hand to palpate more sensitively.

Pelvic examinations need to be performed with the patient in the dorsal lithotomy position. An adequate pelvic examination cannot be carried out unless the patient is on an examining table; significant pathology can be missed when a patient is examined in bed. The physician should remember that many patients find the dorsal lithotomy position and the examination distasteful and should try to put the patient at relative ease. The speculum should be warmed, and the examiner should be extremely gentle. It is good practice to warn the patient before touching the vulva and to advise her of each step in the examination before carrying it out.

One way to improve tactile sensation in the hand examining within the vagina is to bend the elbow about 90° and place it against one's hip, with the corresponding foot placed on a stool. The hand can then be moved to various depths in the vagina by varying the pressure of the hip against the elbow. This permits the muscles of the examining arm to relax, thereby improving sensation. Additionally, flexing of the elbow allows full pronation of the examining hand, thus enabling better palpation of the adnexa, particularly the left adnexus if the examiner is using the right hand in the vagina.

When eliciting adnexal tenderness, one should remember what moving the cervix laterally accomplishes. When the cervix is moved to the patient's right, the fundus is displaced toward the left, thus putting the right adnexus under tension. When attempting to elicit unilateral adnexal pain on cervical motion, the physician should tell the patient that her cervix will be moved, first to one side and then the other, and that she needs to judge which, if either, hurts more. Then the maneuvers should be illustrated to her. The procedure is repeated and the patient is asked to make a judgment. Useful information is gained by watching the patients expression during this manipulation.

Preliminary Hypothesis

As the physician is questioning, observing, and examining the patient, hypotheses are being formed. Some are quickly discarded, whereas others are retained either to be cast aside or more seriously considered as more data are accumulated. This process requires that physicians store a great deal of information in their memory to decide which hypotheses should be kept under consideration. This point was elegantly stated by Cabot in 1917:

> I quite realize that the art of forming reasonable hypotheses about a case of disease and then of testing these hypotheses by such experiments as shall establish the correct and nullify the incorrect, is useless unless the methods of physical and chemical diagnosis have been mastered and unless the natural history of all common diseases has been learned by observation and reading. (p. 19)[10]

Physicians proceed from the constellation of symptoms to some tentative diagnoses, based on their knowledge of the frequency with which certain diseases are accompanied by certain symptoms and vice versa. It is important not to confuse the symptoms with the disease and not to confuse description with diagnosis. For example, a woman presents with complaints of severe bilateral lower abdominal pain, intermittent chills, and fever. The physician learns that the pain began just after her menstrual period and that she uses an intrauterine device (IUD) for contraception. Because the physician is aware that acute pelvic inflammatory disease (PID) presents more commonly in the proliferative than in the luteal phase of the cycle and that there is an association between IUD use and PID, the physician realizes that PID could be the cause of her fever and her lower abdominal pain. Thus, this hypothesis is put on hold because the physician is also aware that many other

entities, ranging from actinomycosis to xenomenia, could cause the same symptom complex. The physician must seek further information to support or disprove the hypothesis.

Further Observations

Further observations may be of several kinds, including ancillary clinical diagnostic procedures and laboratory tests. The physician must understand that the purpose of ancillary clinical procedures is to improve and supplement his or her senses. They are neither infallible nor are they substitutes for thinking and examination.

The physician should remember that when a laboratory test is ordered he or she is subsequently forced to explain the results. Besides being costly, laboratory tests often yield confusing data, which may be a function of the test rather than of the patient. The ranges of normal values have often been generated from studying small groups of allegedly normal people. The control groups are often nonextant, and the applicability of these ranges of normal values to the general population is questionable.

Furthermore, the precision and accuracy of laboratory tests is much worse than most clinicians realize. Not infrequently, a house officer says that the patient's hematocrit dropped from 34 to 32 percent or that the serum sodium rose from 138 to 144 mg/l. When asked to discuss the error inherent in the procedure the house officers have no idea of the precision, much less the interassay variation from day to day.

Finally, because of automation, it is now customary to order a battery of tests rather than to select the individual tests required for proper management. This is an economic reality. However, this should not prevent the gynecologist from identifying those tests that are actually needed.

Before ordering any diagnostic procedure, the clinician should first ask, What will I do with the information? How will it help me to care for the patient? The purpose of establishing a diagnosis is to allow rational decisions about the treatment and prognosis. Procedures or tests should be ordered only if the results will help meet this goal. For example, an erythrocyte sedimentation rate will not help the patient (discussed above) with the abdominal pain, chills, and fever; first, because it will almost surely be elevated, and second, because, if it is normal, the physician will be bewildered but no further advanced in the diagnostic train of thought. What may not be so obvious is that, in this case, an x-ray study of the abdomen or an ultrasonic examination may also prove of little help in establishing a diagnosis with sufficient certainty to be useful in planning therapy.

Suppose that, on physical examination of the abdomen, the physician noted tenderness to palpation, guarding, and rebound tenderness over both lower quadrants; on pelvic examination, the patient complained of pain when the cervix was moved away from the midposition toward either side; and on bimanual examination, pain was elicited on palpating in both adnexal areas, but no discrete masses were felt. The examiner's working diagnosis would be PID. Only a few roentgenographic or sonographic findings could change this impression at this point in the evolution of the definitive diagnosis. Therefore, it is probably wise for the physician to base further management on clinical response to antibiotic therapy rather than to obtain ancillary diagnostic tests, the results of which would not modify clinical management.

Suppose, however, that the patient presented with all of the above findings, except that she had never displayed a temperature above 100°F or that 3 days of antibiotic therapy did not improve her signs and symptoms. The physician might now seek additional information. He or she might perform a culdocentesis. If nonclotting blood were obtained, the diagnosis of ectopic pregnancy would replace PID as the first likelihood. Thus, based on clinical observation and ancillary data, the clinician modifies the initial hypothesis.