

## THE PREOPERATIVE RESPONSIBILITIES OF THE GYNECOLOGIST\*

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SINCE most pelvic operations are elective and but few emergent, the gynecologist usually has ample time for thorough preoperative study and preparation of his patients. Yet it must be conceded that not infrequently after operation the patient is disappointed by the persistence of symptoms or the surgeon distressed by an unexpected death. The prevention of these unfortunate eventualities is a problem, worthy of serious consideration. Expert anesthesia, asepsis, and the easily acquired technic have made pelvic surgery so safe that postoperative recovery can no longer be accepted as the sole criterion of success. The patient submits to operation because she is led to believe that her symptoms cannot be relieved otherwise, and that the repair of anatomic injuries or removal of diseased tissue will cure her ailments. How incumbent it becomes upon the gynecologist, then, not only to detect pathologic changes, but also to correlate cause and effect correctly, so that the purposes of the operation may be fulfilled in every respect. Even with operators of intellectual honesty and highly developed diagnostic acumen, unsatisfactory results and surgical disasters follow pelvic operations sufficiently often to justify a critical survey of the factors concerned in their causation.

The gynecologic examination of the patient is a simple matter; the examination of the gynecologic patient is a complicated procedure. The former can be accomplished in a few minutes; the latter takes time, and involves the exercise of all our diagnostic resources. The tendency to forget that the exciting cause of symptoms may be either remote or local is so great that, in the presence of frank pelvic pathology, a coexisting lesion elsewhere may not even be suspected or sought. For example, alterations in the menstrual function are not infrequently manifestations of constitutional disease, secondary anemia, neuroses, or the inherent peculiarities of the patient, as well as of endocrine imbalance, uterine neoplasms, and adnexal disease. Leucorrhœa, particularly in virgins, is as likely to arise from impaired physiologic processes as from pathologic pelvic conditions. A vaginal discharge is frequently associated with anemia, and promptly cured with iron and arsenic. In several cases of leucorrhœa occurring in adolescent girls, radiography of the chest disclosed the presence of

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an incipient pulmonary phthisis. The futility of local or operative treatment under such circumstances is obvious. Sacral backache may be due to retrodisplacements of the uterus, but it may also be an expression of focal infection, an overloaded colon tugging on its mesentery, sacroiliac strain, posterior parametritis, and numerous other etiologic abnormalities. I confess to personal embarrassment in two instances in which this type of backache continued after plastic and round ligament operations, and in which it was promptly relieved by subsequent tonsillectomy. I operated upon another patient with adherent retroflexed uterus, and was chagrined afterward to find that the backache persisted until the plantar arches were supported. Pain in one of the lower abdominal quadrants sometimes serves as the pretext for the removal of an ovary or the appendix, when the real cause of the annoyance lies in the urinary tract. In one case of this character, seen about ten years ago, the patient had been subjected to a left oophorectomy and tubal resection by another operator two years before I saw her. Since the inguinal pain had recurred, I made the mistake of operating upon her again, removing a hydrosalpinx in the stump of the left tube, and the right ovary, which had become cystic. It soon became evident that the second operation had also failed of its object, and that the exciting cause of the pain must be searched for elsewhere. A renal function test, ureteral catheterization, and pyelography demonstrated a pronounced stricture of the left ureter, which was easily cured by dilatation. I have never done an elective gynecologic operation since then without preliminary cystoscopy and an indigocarmine renal function test. In a careful analysis of 600 consecutive private case histories, it was surprising to find that 119, or 20 per cent, of gynecologic patients had some definite lesion of the urinary tract or symptoms referable to it.

From the foregoing premises, the following inferences seem justified: a liberal amount of time should be allotted to new patients; history-taking should not be delegated to office assistants; a complete physical inventory is essential; cystoscopy is an indispensable aid to the gynecologist, and a renal function test should be done before every elective operation. The further one advances in the practice of his specialty, the more serviceable are found the fundamental principles of diagnosis.

Some years ago Sir D'Arcy Power formulated the following aphorisms in describing the developmental stages in a surgeon's career: "In the first, he loses his fear of hemorrhage; in the second, he ceases to multiply operations; in the third, he acquires the moral courage to stop in the middle of an operation when he finds the condition inoperable. There is a final stage which he never acquires with the present

span of life, the ability to gauge correctly the vital resistance of the patient; yet on this depends the success of every operation." At the present time, however, we seem to be approaching the elusive fourth stage, by invoking the aid of modern laboratory procedures. Most surgical catastrophies are the result of serious constitutional or metabolic impairment, and while it is true that some patients may recover in spite of such derangements, others will surely die of them if they are not discovered and corrected. The constantly broadening field of biologic chemistry has furnished so much enlightening information that, with painstaking preoperative investigation, our prognostic facilities are tremendously enhanced. It is therefore better to devote the necessary attention to these details than to rue the oversight of them after the grave has been filled. I admit that routine laboratory examinations have been overpopularized, and that occasionally there is danger of a laboratory report superseding clinical judgment, but this is an extreme to which I have no reference. It is quite possible to become proficient in the science of medicine and still practice the art.

No general anesthetic should be administered, except in emergency cases, without an examination of the heart, and if there is marked evidence of cardiac functional disturbance, an electrocardiogram and renal function test should be done. Many operative cardiac deaths are renal deaths. Those patients who show lengthening of conduction time should be digitalized. Cases of aortic lesions and mitral stenosis are always hazardous. Good compensation of all valvular leaks is of paramount importance, and if time is necessary to secure it, time should be taken. A compromised myocardium is often the unrecognized cause of death; unrecognized because the patient does not die of cardiac failure but of embolism or pulmonary complications. In the field of obstetrics, a patient with mitral stenosis may begin her pregnancy with apparently good compensation, and subsequently develop cardiac asthma, bronchitis, or dangerous decompensation. As the intraabdominal pressure increases slowly, the symptoms progress insidiously, are easily recognized, and appropriate therapeutic measures can be instituted before the patient succumbs. On the other hand, in operative work the complications must be anticipated; the cardiac reserve fails rapidly and there is usually insufficient time to apply corrective measures before the patient expires. The simplified technic of infiltration, parasacral, and spinal anesthesia have done much to diminish the postoperative morbidity and mortality in patients with crippled hearts.

Arterial hypertension is nearly always associated with subnormal renal function. Blood pressure readings should be taken invariably, and the pulse pressure regarded as particularly significant. Patients

should be educated to submit twenty-four-hour and not casual specimens of urine for examination. If the daily renal excretion of urea is less than 300 grains, blood retention of nitrogenous waste products may be suspected. Indulgence in routine determination of the chemical elements of the blood places an unnecessary burden upon the laboratory. The patients upon whom such tests should be done are those over fifty years of age, those with hypertension, with poor renal function, with nephritis or diabetes, and those confronted with a formidable operation. Although chromocystoscopy is preferable for the diagnosis of urinary lesions other than nephritis, the phenol-sulphonephthalein test is a better indicator of the metabolic processes as represented by the kidneys. Abnormal quantities of urea nitrogen, uric acid, or creatinine in the blood should be reduced before any elective pelvic operation is undertaken. A salt free diet, with restricted protein ingestion, stimulation of the emunctories, absolute rest, etc., will do much to convert a poor risk into a good one.

Acidosis has been recognized as an entity and as a grave incident in operative cases for a long time. While it may be associated with hyperglycemia, it may also exist independently of diabetes. Not only is it necessary to detect its presence before operation, but also to fortify the patient against its advent afterward. This explains the practice of prescribing alkalis before operation and the inclusion of alkalis and glucose in postoperative treatment indiscriminately. Recently, however, the frequent occurrence and seriousness of alkalosis as a complicating factor has become appreciated, and this challenges the wisdom of such routine therapy. Acetone and diacetic acid in the urine, usually regarded as suggestive of acidosis, have been observed in the presence of alkalosis. I have also noted a high urea nitrogen of the blood concurrently with a greatly increased  $\text{CO}_2$  combining power. Distinction between acidosis and alkalosis is imperative, as the treatment of one exaggerates the other. The determination of the hydrogen-ion concentration of the blood and the  $\text{CO}_2$  combining power of the blood plasma are of immense practical value in differentiating the two. In fact, I believe that postoperative treatment can be regulated more intelligently with a knowledge of the  $\text{CO}_2$  combining power than with the estimation of any other single blood component. The essential cause of acidosis is usually an insufficient utilization of carbohydrate, because of an inadequate supply of the carbohydrates themselves or because of the inability of the body to oxidize them, so that a glucose solution given intravenously will soon compensate for the deficiency. The glucose has considerable value as a diuretic, counteracts the endogenous destruction of body proteins, and aids materially in maintaining renal function. Bicar-

bonate of soda or potassium acetate may be added to advantage. In alkalosis, the remedial measures consist of hydrochloric acid and chlorides.

I would utter a word of caution against the use of radium in the pelvis of any patient with a goiter and an increased metabolic rate. Such a patient, with a rate of plus 26, was recently referred to me for treatment of a cervical carcinoma. An application of 2000 milligram hours was promptly followed by an intense thyrotoxicosis and death in forty-eight hours. Reexamination of the blood after twenty-four hours showed an insignificant increase of the urea nitrogen from 11.9 to 14, and of the CO<sub>2</sub> combining power from 56 to 60. The systolic blood pressure, however, rose from 150 to 208. The clinical picture was that of a patient with a toxic goiter who had been given thyroxin. While these untoward effects cannot be explained, I cannot help but feel that this unfortunate occurrence was due to something more than coincidence.

Women with a pronounced anemia are universally recognized as risky candidates for operation and are transfused beforehand. I would add my voice to that of Ward and others, in a plea for the preoperative transfusion of those with lesser degrees of anemia, especially those with impaired physiologic functions, to insure a generous supply of oxygen to all the tissues. Patients with large bleeding fibroid tumors can be treated with just enough deep x-ray therapy to control the hemorrhage, and then transfused, before hysterectomy. It is unwise to transfuse the patient first, since the irradiation has a destructive effect upon the newly introduced leucocytes, particularly the lymphocytes. On the other hand, more benefit will be derived from the transfusion if the blood leak has already been stopped. Immediate operation is then no longer urgent, and additional time may be taken to reinforce the patient's vitality in other ways.

Several cases of acute pyelitis developing during the second week of an apparently smooth convalescence have impressed upon me the advisability of giving patients who show indicanuria a series of colonic irrigations before operation. The oral administration of *Bacillus acidophilus* cultures also seems to help in the control of the toxic intestinal emanations, from which the pyelitis probably originates. Hexylresoreinol in full doses protects the upper urinary tract from bacterial invasion, and is a useful prophylactic agent in these cases.

The time at my disposal does not permit of the consideration of other important details that influence operative success. Neither has it been possible for me to present the biochemic aspects of the subject in a technical manner. As a clinician, I have learned to value and

profit by the information to be secured from the laboratory, not at the expense of surgical judgment, but correlating the one with the other. In emergency cases, the gynecologist must try to save life; in elective cases, he assumes the responsibility of relieving symptoms and conserving life, and must exercise eternal vigilance that life is not jeopardized.

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*(For discussion, see page 286.)*

DR. W. E. DANNREUTHER read by invitation a paper entitled **The Preoperative Responsibility of the Gynecologist.** (See page 260.)

#### DISCUSSION

DR. FREDERICK C. HOLDEN.—I am inclined to think that the increased operative incidence, or increase of large operative incidence, is produced by several factors, as follows:

*Ignorance.* I believe that many men proceed, not knowing many of these very important things to which the doctor has called attention. They are unable to realize the relationship existing between the pathology and the symptoms, as he pointed out, and people receive unnecessary operations, although honestly so, at the hands of men who are not able to judge the cause of the symptoms. The result is that people are operated upon and a cure is not effected. I think there are still many of us who fall into that category.

Another cause of high operative incidence is *carelessness*. We know of these things, but we do not do them. We have large services, and, as a result, we become routine and neglect many of these things that make so much for success. In so far as our service at Bellevue, which is a large one, is concerned, our operative incidence covering a period of six years is under 22 per cent, and we attribute that principally to preoperative study. We are very fortunate there in not having to hurry operations. Patients never enter in afternoon to be operated upon in the morning. We have a longer time for preoperative study, which is absolutely necessary.

DR. JAMES N. WEST.—No matter how anxious we may be to carry out thorough examination, biochemical and otherwise, patients today expect to be operated upon quickly, and they demand it. It is also very difficult to get the average patient, especially what you might call a semiprivate or ward patient in the hospital, to come in several days before and have this proper preparation. Then, again, of course, the vast majority of our cases do not demand such careful investigations. Examination much less thorough than that suggested by the doctor is sufficient to demonstrate that the patient's heart and kidneys are sound and that they are surgically competent.

I thoroughly agree with him, however, on any case which shows an incompetent surgical history. For instance, if we have a case where the function of the kidney seems to be disturbed, where the patient seems to be toxic, where she has Bright's disease, diabetes, tuberculosis, high blood pressure, or vascular disease, then I believe she should be put through a thorough examination. I had a patient the other day, a woman who weighed 230 pounds, who was extremely anemic, and who had been bleeding profusely. I found 40 per cent hemoglobin. I did a supravaginal hysterectomy for a large fibroid tumor, which was mostly submucous, and never have I had a patient make a more satisfactory recovery.

I have been surprised to find that high blood pressure is not as much of a contra-indication to operation as I had believed it to be. In the last two or three years I have been forced to operate upon several patients with high blood pressure, realizing or at least feeling that they were taking a pretty big chance. They recovered satisfactorily.

DR. HARBECK HALSTED.—The late Dr. Studdiford was always tremendously interested in this subject of preoperative study. We have a rule at Sloane that no patient shall be operated upon less than forty-eight hours after admission unless an immediate operation is absolutely essential. The wait in the hospital before operation is usually nearer a week.

The two principles which we have always followed are: patients should be in the hospital at rest for at least forty-eight hours before operation, and that we should use our medical consultant in all questionable cases.

Although I am tremendously interested in cystoscopy and was very glad to hear the doctor mention its importance, I believe it is not necessary to cystoscope every gynecologic patient.

DR. DANNREUTHER (closing).—I fear that I have been misunderstood. I do not advocate that all of the diagnostic tests to which I have referred should be done



as a matter of routine. On the contrary, on my service at the Post-Graduate Hospital even a Wassermann reaction is not done routinely. I am, however, trying to educate the members of my staff to realize the importance of recognizing the clinical signs suggestive of impaired metabolism or other physical derangements, and I am relying more and more upon their discretion to determine which patients need certain tests. In the case of the dispensary patient who is to enter the ward, I have the necessary examinations made before admission to the hospital.

I do not agree with the gentleman who says that patients demand immediate operation. It is really easier to persuade those who need operation to enter the hospital after the clinic worker has established a personal contact with them, for which a week or two of palliative treatment is usually required.

I have also found that the private patient will not object to necessary diagnostic procedures if I explain that these things are done solely for her own protection.

I agree that it is not advisable to carry out any elaborate diagnostic measures without some definite indication, but if we develop our powers of observation and seize the clues which the general physical make-up of the patient very often suggests, the selection of the proper tests becomes a simple matter.

Some years ago Dr. Baldy, of Philadelphia, reported a series of 3,413 gynecologic operations in which 16 sudden postoperative deaths occurred. The most striking feature was that 13 of them occurred in 366 cases of hysterectomy for fibroid, leaving 3 in 3,047 operations for other conditions. Unfortunately, I have not been able to determine the total number of pelvic operations that I have done personally, but I know that since 1915 I have had but two sudden postoperative deaths, one of which was due to acute paralytic ileus and the other to pulmonary embolism following a thrombosis in the femoral vein.