



# GYNECOLOGY

THE TEACHINGS OF JOHN I. BREWER

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## GYNECOLOGY

*Dedicated*  
*to*  
HAROLD O. JONES, M.D.,  
*whose teachings are reflected*  
*throughout this work*

## Preface

The purpose of this work is dual. The first is to arrange and present the gynecologic entities and related conditions according to the manner in which they can be utilized best in the making of clinical diagnoses, in the treatment of patients, and in the teaching of gynecology. Their arrangement into groups is predicated upon the symptoms and/or findings produced. For example, when a clinical history of abnormal uterine bleeding is obtained from a patient and a physical examination reveals a pelvic tumor, a survey of the title page of Chapter 2, PELVIC TUMOR WITH ABNORMAL BLEEDING, will familiarize the reader at once with the condition that may be present. The method of grouping necessitates frequent repetition since a single gynecologic entity, such as pregnancy, fibroids, pelvic infections, etc., may produce symptoms and findings that vary with the stage of the condition or with other factors. Such repetition is not only good pedagogy but also emphasizes the more common gynecologic conditions that we must consider and think of each day. Such a method is of distinct advantage to the medical student, to interns and residents during their formal hospital training, and to physicians and surgeons in active practice.

The second purpose is to present sufficient, essential information about each disease so that one can learn basic clinical gynecology and can develop a pattern of thinking which will expedite and make more efficient the examination and treatment of patients. Various theories of etiology, speculations concerning the exact character of a lesion, and arguments for and against various types of treatment have been excluded for the most part. As one's experience increases, a broader view of these elements will naturally be required and can be obtained from various excellent publications. For the practical needs of most men in medicine it is desirable that they know the thinking and the practices of a single group, uncolored by a discussion of the pros and cons of every aspect of each disease. We acknowledge the right and value of opposing schools of thought, and we offer this material not as the only way to think and do, but simply as our way.

Most present teaching methods instruct the student to consider individual entities rather than the gynecologic patient as a whole. This does not prepare him to attack a clinical problem logically and in an

organized fashion. Many cannot make the transition to the clinical approach necessary in the evaluation of a patient's illness. This, we believe, is a defect in the teaching and training methods. The approach to gynecology presented here is superior to the method of teaching which disseminates all the facts of one isolated entity after another without training the student to use the information in a practical way.

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**Chapter 1**

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**INTRODUCTION**

SOME PELVIC TUMORS never produce symptoms, whereas others frequently give rise to them only intermittently. Many of the tumors discussed in this chapter are of the latter type. They are so frequently detected for the first time during an asymptomatic phase, that it is necessary to include them here.

They may endanger the health or even the life of the patient. They may continue to grow without producing symptoms until treatment is of no avail. Since they are usually discovered only in the course of a pelvic examination, it is most essential that vaginal, rectal, and rectovaginal palpation be a routine part of all physical surveys. In certain states premarital tests by a physician are mandatory. All too often only a vaginal smear for gonorrhea and a blood test for syphilis are made and the pelvic examination is omitted. A case showing the importance of the pelvic examination follows: A patient, twenty-two years of age, came to the office for premarital tests. An asymptomatic tumor filling the true pelvis and extending half way to the umbilicus was found. It was spherical, solid, freely movable, and approximately 20 cm. in diameter. The uterus and ovaries were not palpated separately from this tumor mass. The probable diagnosis had been a solid ovarian tumor, and operation was recommended. When the abdomen was opened, the tumor was

found to be in the uterus and the ovaries and tubes were normal. A portion of the tumor was removed for biopsy. This revealed a sarcoma. A complete hysterectomy and bilateral oophorectomy were performed. Subsequent tissue studies confirmed the diagnosis. This patient has been free of malignancy for thirteen years. In this instance the performance of a routine pelvic examination undoubtedly saved a life.

Increasing numbers of women are going to physicians for routine physical check-ups. A pelvic examination must always be included. Women over twenty years of age should be urged to have pelvic examinations yearly. When the patient reaches the age of thirty-five or forty years, a reduction of the time interval to every six months should be recommended. In this way a diagnosis can be made early enough to obtain good therapeutic results if pathologic lesions exist.

When there is a tumor or enlargement in the pelvis, an attempt must be made to determine the organ or tissue in which it has arisen. The history may be important. For example, a patient may give a history of acute lower abdominal pain and fever which had necessitated two or three weeks' rest in bed several years previously. This suggests that she has had a pelvic infection and that the present enlargement is quite possibly of inflammatory origin.

An accurate pelvic examination can be made only if the bladder, rectum, and sigmoid are empty. When the urinary bladder is filled, the fundus of the uterus cannot be palpated distinctly. A distended rectum obscures pathologic lesions behind the uterus in the posterior cul-de-sac. The sigmoid filled with fecal material may give the impression that tumors exist, or if tumors are present, they may seem larger than they actually are. A case is recalled in which a redundant sigmoid containing multiple, discrete, firm fecal masses induced the examiner to make a diagnosis of uterine fibroids and recommend operation. A cleansing enema, however, did away with the "tumors."

The examination should be conducted with the patient on a suitable table. When the examination is carried out with the patient in bed, her buttocks partially buried in a soft mattress, accuracy of palpatory findings is diminished. Vaginal, rectal, and rectovaginal examinations should be made. Only by the latter method can a lesion in the rectovaginal septum be detected accurately. The rectal approach permits the examining finger to reach higher in the pelvis than can be done by a vaginal examination. The shape, regularity of contour, size, consistency, mobility, and location of the tumor are determined. The relation of the tumor to the other pelvic organs is important. If the uterus and/or ovaries can be palpated separately from the tumor, considerable progress

toward a diagnosis is made. This, however, may not always be possible. If the physician is still uncertain of the diagnosis, a second examination a week or two later will frequently clarify the issue.

### INTRA-UTERINE PREGNANCY

Pregnancy must always be considered whenever an asymptomatic lower abdominal or pelvic tumor is present in a woman of childbearing age. Otherwise, embarrassing errors in diagnosis and treatment will be made. All too frequently a pelvic "tumor" is found to be a normally pregnant uterus. Irrespective of the characteristics of the enlargement or the presence or absence of symptoms, the possibility of pregnancy must be kept in mind. It should also be remembered that pregnancy and tumors such as fibroids can coexist.

The pregnant uterus is enlarged, soft, usually symmetrical, globular in shape, smooth of contour, and movable. The isthmic portion is frequently so soft that when it is compressed between the abdominal and vaginal examining fingers the fundus seems to be separate from the cervix (Hegar's sign). The vulva, vagina, and cervix may have a purple hue (Chadwick's sign). The breasts are often swollen and tender. The areolae are large, pigmented, and the peripherally placed Montgomery glands are hypertrophied. Colostrum may or may not be present. In patients who have not had previous pregnancies, colostrum usually is indicative of gestation.

Occasionally it is difficult to palpate and to determine accurately the physical characteristics of the uterus. This may be due to its position, as, for instance, when it is horizontal or retrodisplaced. In the latter case the uterus always seems larger than it actually is. Bimanual replacement of the uterus into an anterior position will allow more accurate interpretation. The soft consistency of a pregnant uterus may be simulated by a full urinary bladder, a soft fibroid, an ovarian cyst, or even a redundant sigmoid lying anterior to the uterus. An irregularity of its shape does not exclude the diagnosis of pregnancy since the uterus is often asymmetrical during the first three months of normal gestation. Irregularity of contour of a pregnant uterus may also be imparted by fibroids. Asymmetry in shape and abnormality in position can be produced by associated lesions, adhesions, or a previous operative procedure such as suspension of the uterus. It may, therefore, be difficult to reach a diagnosis. However, if the "rule of thumb" given in the first sentence of this discussion of pregnancy is observed, few errors will be

made. If enlargement of the uterus is noted in a second examination three weeks later, this will usually clarify the diagnosis. Tests for pregnancy (Aschheim-Zondek or Friedman) are of considerable value when performed *in conjunction* with vaginal examination. Some errors may occur, but in most cases the tests are reliable when done by a competent personnel. Accurate results are obtained when the test is performed one or more weeks after a menstrual period is missed. In those patients who have apparently not missed any menstrual periods and yet are pregnant the test is particularly helpful. After four and one-half or five months of pregnancy, identification of fetal bones by roentgen examination offers conclusive evidence. From a practical standpoint re-examination of the patient after three weeks to determine the rate of uterine growth is a common and satisfactory method for the diagnosis of pregnancy.

### UTERINE FIBROIDS

(*Myomas; Fibromyomas; Leiomyofibromas*)

Although uterine fibroids may be associated with such symptoms as bleeding, disturbances of childbearing function, and those due to pressure, they are more frequently asymptomatic.

The palpation of an irregularly shaped, enlarged uterus which contains multiple, firm, spherical tumors in or attached to it usually establishes the diagnosis of fibroids. If the tumors are small, there may be no distinguishable enlargement of the uterus and only an irregularity of its contour may be detected. Under some circumstances the uterus containing fibroids may be regular in outline and symmetrically enlarged. A single fibroid may also produce such a finding, especially if the tumor projects into the cavity of the uterus, or if it is situated deeply in the myometrium. When a single tumor is located near the serosal surface, it is apt to produce a bulging irregularity.

As has been intimated, these benign tumors may develop in various portions of the uterus. When located within the muscle wall they are termed "intramural." "Submucous" indicates that the tumor is immediately beneath the endometrium. Those under or encroaching upon the outer surface are called "subserous." A pedunculated fibroid is one which is separated from the uterus except for a pedicle attachment and projects into the abdominal cavity (Fig. 1). A fibroid located within the cavity of the uterus and attached by a pedicle is termed a fibroid polyp. Occasionally a fibroid develops in the wall of the cervix (cervical fibroid). The term "intraligamentous" designates a tumor that projects laterally

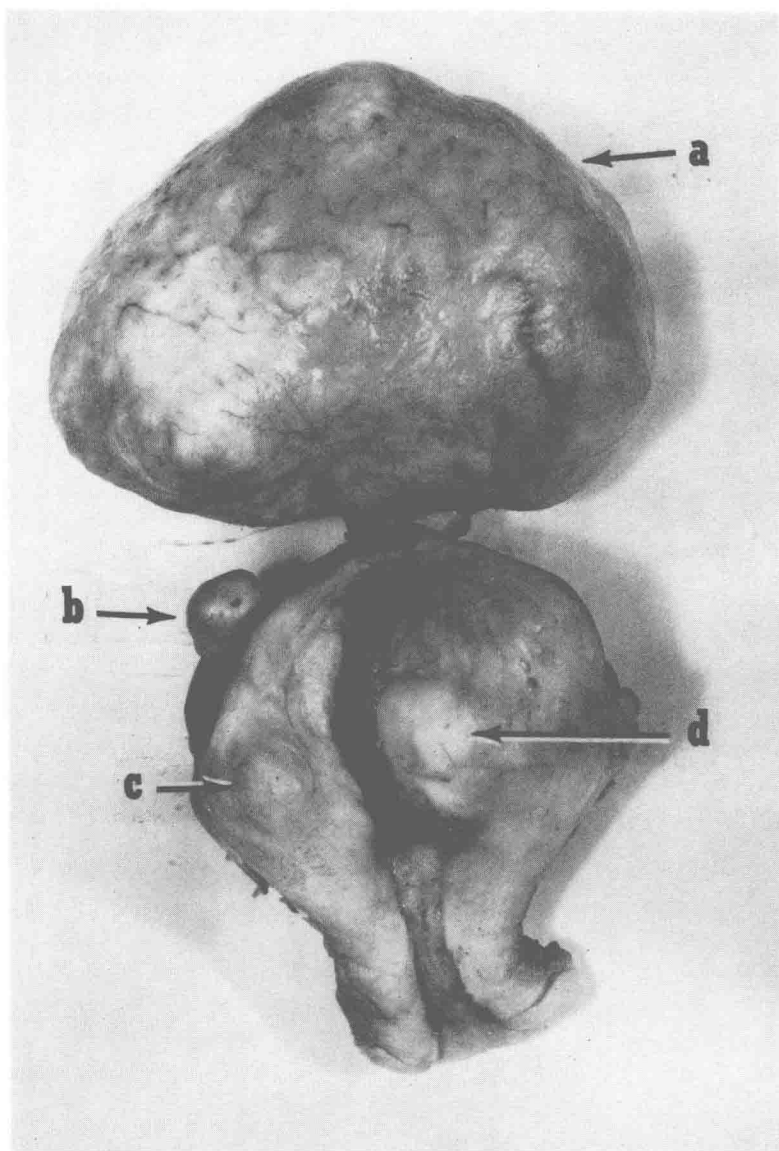


FIG. 1.—Photograph of fibroids in a completely removed uterus. (a) Pedunculated; (b) subserous; (c) intramural; (d) submucous, causing distortion of the uterine cavity.

(Courtesy of Dr. J. H. Huffman.)

from the uterus between the sheaths of the broad ligament. A pedunculated or intraligamentous fibroid may, on occasion, be found completely detached from the uterus and will derive its blood supply from adjacent tissues to which it is adherent (parasitic fibroid). One should determine the locations of the fibroids during the examination. Treatment is frequently dependent upon their position. Examples are:

- (1) A pedunculated fibroid may undergo degeneration or become twisted on its pedicle. Since infection and peritonitis may follow, surgery is indicated.
- (2) Severe hemorrhage may result from degeneration and ulceration of a fibroid polyp. Dilatation of the cervix for a considerable length of time by a fibroid polyp projecting into the cervical canal predisposes to infection (endometritis, pelvic cellulitis, pelvic thrombophlebitis, or peritonitis). Simple vaginal removal of the polyp is indicated. The infection subsides rather promptly (four to eight weeks) and then additional surgery, if required, may be undertaken safely.
- (3) An intraligamentous fibroid may produce an ureteral obstruction, hydro-ureter, or hydronephrosis. The fibroid must be removed to prevent such complications or to relieve obstruction, if it is present.

Degenerative changes frequently occur, especially in large, pedunculated, polypoid, or parasitic fibroids. These changes are edema, necrosis, liquefaction, infection, hyaline degeneration, calcification (Fig. 2), mucoid degeneration, red degeneration, lymphangiectasis, and malignant transformation.

An accurate estimate of the size of the tumor mass and of the individual tumors should be recorded on the clinical record. The rate of growth over the months and years that follow can thus be gauged. This is necessary because rapid growth is indicative of sarcomatous or degenerative changes. However, it should be kept in mind that a seemingly rapid enlargement of the tumor may occur during pregnancy.

Fibroids are characteristically firm. Softness of the tumor suggests edema, degenerative changes, or pregnancy. Distinguishing a soft fibroid from a uterine pregnancy may require a Friedman or Aschheim-Zondek test or repeated bimanual examinations over a period of a month or more, with accurate observations of the rate of enlargement of the uterus. The increase in size of a pregnant organ in a month's time is quite apparent, while that of an uncomplicated fibroid is usually not percep-

tible. Meticulous bimanual palpation of the consistency of a pelvic tumor ordinarily will adequately differentiate an ovarian cyst from a fibroid. In addition, the ovarian cyst is separate and distinct from the uterus.

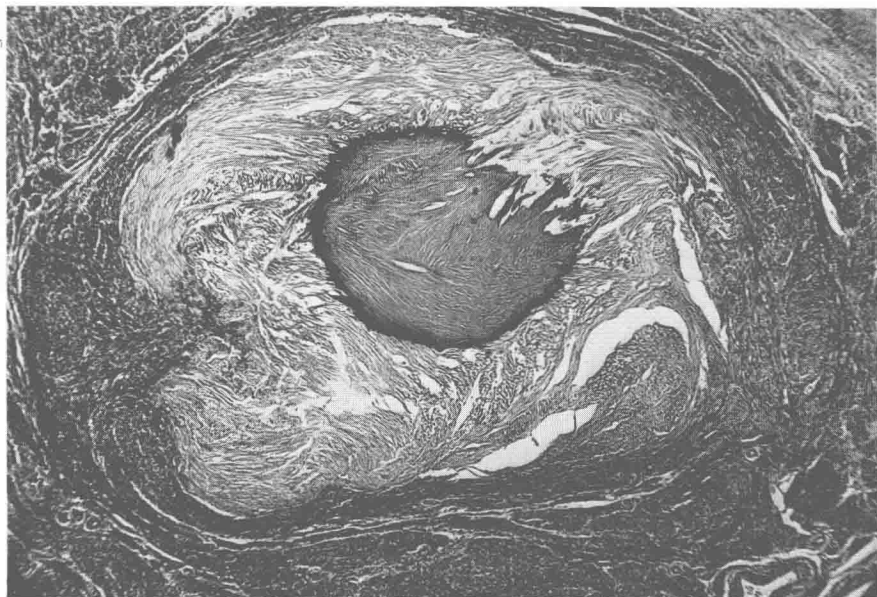


FIG. 2.—In the center of this small fibroid there is a calcified region. Normal myometrium surrounds the fibroid. Photomicrograph.

Fixation or lack of mobility of fibroids often indicates the presence of additional abnormalities:

- (1) Concomitant pelvic lesions such as endometriosis or residues of pelvic infection produce fixation.
- (2) Peritoneal adhesions which have formed subsequent to previous surgery or to degenerative changes in a fibroid also cause limitation of motion.
- (3) A tumor in the broad ligament is restricted in mobility by the sheaths of that ligament.
- (4) Fibroids may be immovable when they are approximately the size of and fit tightly in the pelvic cavity.

Thus, when these tumors are fixed, a diagnosis of fibroids alone is inadequate and a more exact one can and should be made.

A retrodisplaced or, more rarely, an acutely anteфлекed normal uterus may be misinterpreted as a fibroid. A retrodisplaced uterus feels larger than it actually is. Replacement into an anterior position makes estimation of its size more accurate. If this is impossible because of adhesions or other factors, extreme care must be taken in differentiating this apparent enlargement from that due to fibroids or other lesions. The fundus of an acutely anteфлекed uterus may simulate a fibroid projecting from the anterior wall of the uterus. Pushing the fundus backward and straightening the uterus on its axis readily clarifies the diagnosis.

Hystero-graphy, injection of gas into the peritoneal cavity (pneumoperitoneum), and culdoscopy are rarely, if ever, necessary for the diagnosis of fibroids. In some instances asymptomatic fibroids are discovered during cystoscopy or pyelography owing to their distortion of the urinary bladder or ureters.

When it is certain that fibroids are present, one should palpate the uterosacral ligaments and posterior cul-de-sac in search of endometriosis. This is suggested because of the marked frequency with which fibroids and endometriosis coexist. Detection of small, fixed, tender nodules permits one to make this additional diagnosis.

#### TREATMENT

In this chapter only the treatment of those fibroids without symptoms will be considered.

Many tumors require no therapy, and the safety and health of the patient are sufficiently guarded by bimanual examinations every three to six months. Other tumors necessitate active treatment which consists fundamentally of surgical procedures.

Surgical treatment is indicated in the following:

- (1) If the tumor mass is larger in size than that of a three months' pregnant uterus; degeneration and other complications are much more frequent in fibroids of larger size.
- (2) If the fibroid is pedunculated. This type of tumor is prone to become twisted on its pedicle. With the diminished blood supply, necrosis and infection develop. Local or generalized peritonitis may result.
- (3) If a myomatous polyp is in the cavity of the uterus. A tumor in this position tends to become infected, necrotic, and frequently has an ulcerated surface. Profuse, prolonged, continuous, and uncontrolled bleeding may occur. Profound anemia and infection



are sequelae. The infection may extend into the broad ligaments (cellulitis) and the pelvic veins may become involved.

- (4) If the tumor exerts pressure on and produces distortion of the urinary bladder.
- (5) If the tumor is intraligamentous. Such fibroids are fixed by the sheaths of the broad ligament. Pressure effects are more readily produced on the ureter, for instance, under such circumstances. Hydro-ureter, hydronephrosis, renal damage, and hypertension may result. Pressure on the veins traversing the true pelvis may result occasionally in thrombosis or edema.
- (6) If there is some concomitant pelvic abnormality that requires surgical treatment. If the abdomen is opened in order to care for such lesions as endometriosis, ovarian tumors, residues of pelvic infection, etc., the fibroids, irrespective of their size or position, should be suitably treated. If a cystocele repair is to be performed, the fibroid tumors, even though small, should be removed either by myomectomy or vaginal hysterectomy, unless this is contraindicated by age or desire for pregnancy.
- (7) If the rate of growth is rapid. Malignancy is immediately suspected, although degenerative changes may also bring about rather rapid enlargement of these tumors. Accurate diagnosis preoperatively of the cause of the increase in size is rarely possible.
- (8) If the patient has an extreme and persistent fear of tumors. On some occasions it is impossible to allay the fear of a pelvic tumor. When assurance that it is not malignant and that it need not be removed fails to quiet the patient's obsessive worries, surgery is warranted.
- (9) If there is uncertainty of diagnosis. Malignancies of the ovary are frequently asymptomatic and may be diagnosed incorrectly as fibroids. Permitting them to go untreated is a serious error. If there is doubt as to whether a tumor is a fibroid or a solid ovarian tumor, surgery is indicated.

While these criteria are basically correct, other factors must be considered, such as the age of the patient; her desire for pregnancy; the possibility of her conceiving and completing a pregnancy successfully; the fact that she is pregnant when the tumors are first discovered, and the presence of general physical conditions that contraindicate major surgery. Not only do such factors influence decisions between surgical and nonsurgical management, but in many instances they also play an important role in the selection of the type of procedure.