The PMPO Syndrome
(Postmenopausal Palpable Ovary Syndrome)

Hugh R. K. Barber, M.D.
Edward A. Graber, M.D.

The time has come to re-evaluate our clinical approach to ovarian pathology. Although cancer of the cervix is still the most prevalent cancer of the female reproductive system, ovarian cancer has become the leading killer of women from gynecologic malignancy. With the present state of diagnostic development, diagnosis of an ovarian tumor is a matter of chance rather than a scientific method. By the time it is diagnosed, ovarian cancer in more than 50 percent of the patients has spread beyond the ovary. The hard fact remains that a pelvic mass found during a pelvic examination is the only practical and consistent clinical method available to us to detect an ovarian tumor. Certain functional or dysontogenetic tumors with hormone activity are the exception. These, however, are only a fraction in number, compared to the epithelial tumors, which are the main group of killers.

We euphemistically state that women are protected if they have a pelvic examination every six months. However, it has been reported that the chance of detecting an ovarian neoplasm during routine pelvic examination in an asymptomatic woman is 1 in 10,000 examinations.

The insidious onset of ovarian cancer needs no elaboration. Many competent gynecologists have had the devastating experience of finding widespread disease in a patient who had a negative pelvic examination six months before. Pelvic examination itself has many limitations because of the difficulties inherent in evaluating the pelvic contents in the

Dr. Barber is Director of Obstetrics and Gynecology, Lenox Hill Hospital, New York, New York; Attending Surgeon, Memorial Hospital for Cancer and Allied Diseases; Associate Attending Obstetrician-Gynecologist, New York Hospital; and Clinical Associate Professor of Obstetrics and Gynecology, Cornell Medical School, New York.

Dr. Graber is Attending Obstetrician-Gynecologist and Associate Director of Obstetrics and Gynecology, Lenox Hill Hospital, New York, New York.

Editorial reprinted from Obstetrics and Gynecology 38: 921-923, 1971.
presence of obesity, a long conical inelastic vagina with contracted fornices, vaginal atrophy or lack of cooperation in the apprehensive or defensive patient. Among patients who survive, it is merely serendipity that she was seen at a particular point in time when the tumor was still localized and could be removed intact. In many, the tumor is found accidentally or incidentally. By the time a patient complains of a mass, abdominal enlargement or pain, the tumor has usually involved the surrounding organs with disease or adhesions; indeed, in a high percentage of such patients, the regional lymph nodes are already affected. It follows that since it is not usually possible to diagnose ovarian cancer in its early stages, it is not possible to treat it with any predictable degree of certainty for cure.

It is an accepted axiom that the ovary may be too old to function but never too old to form tumors. Since the peak incidence of ovarian cancer is between ages 45 to 60, especially careful evaluation (combined with a constant suspicion) should be carried out in this high-risk group.

We wish to report a diagnostic sign of early cancer in the ovary in the postmenopausal patient which has been most valuable and consistent in our hands. It is simply that the palpation of what is interpreted as a normal-sized ovary in the premenopausal woman represents an ovarian tumor in the postmenopausal woman. This suggestion may appear to be insignificant in terms of the total problem, but we have had the opportunity to operate upon three women with an ovary of this type during the past year—all were malignant. It is our opinion that the postmenopausal, palpable ovary is a most significant finding, and we wish to alert the gynecologist to its importance.

Several points can be enumerated to support our thesis. There is no such thing as physiologic enlargement of the postmenopausal ovary. Physiologic cysts can only arise from the nonrupture of a graffian follicle (follicle cysts) or cystic degeneration or a corpus luteum (lutein cysts). There are no follicle or lutein cysts in a postmenopausal ovary, simply because there are no follicles or corpora lutea.

The contrast between the premenopausal and postmenopausal ovary is striking. Whereas the normal ovary measures 3½ x 2 x 1½ cm., the menopausal ovary tends to atrophy and shrink down when the graffian follicles and ova disappear. The tunica albuginea becomes very dense, causing the surface of the ovary to become scarred and shrunken. The cortex shows increased thinning as well as numerous corpora fibrosa and corpora albuginea with areas of dense fibrosis and hyalinization. The ovary shows varying degrees of avascularity. Eventually, the ovary becomes an inert residue that consists of connective tissue, and it clings to the posterior leaf of the broad ligament. Its pink color becomes pure white. It shrinks in size to 2 x 1.5 x 0.5 cm. and in some it may be as small as 1.5 x 0.75 x 0.5 cm. Its wrinkled surface resembles the gyri and sulci of the cerebrum. At this point, it cannot be palpated on examination. When the postmenopausal palpable ovary (PMPO) exists, it is not a normal ovary for this stage of life.

Traditionally, a woman who is amenorrheic is clinically considered menopausal. However, chemically and anatomically, the changes described above occur during a period of time. Although they are quite rapid, it takes approximately three to five years for the terminal picture to be achieved. The conclusion must then be logically drawn that if an ovary is palpated three to five years after the clinical menopause, it is a pathologic ovary until proved otherwise. This applies regardless of its size in centimeters. It is our recommendation that the patient (without delay for obser-
vation) should have the benefit of an expedited examination under anesthesia and, if the previous impression is verified, she should undergo laparotomy. A careful abdominal exploration followed by total hysterectomy and bilateral oophorectomy should be done. Although there is a place for splitting and biopsying the ovary in detecting early cancer in the premenopausal patient, the ovaries should be removed without biopsy in the postmenopausal group.

**Conclusion**

If we are to save more women and diminish the mortality rate from ovarian cancer, we must become more liberal in our indications for operation. We suggest that the palpation of what appears to be a normal-sized ovary for a patient three to five years postmenopausal is indicative of an ovarian tumor and should be investigated promptly. These patients should not be followed and re-evaluated but rather subjected to proof as to the presence or absence of an ovarian tumor. To wait until one feels a solid tumor mass of up to 5 cm. and expect a cure is an exercise in fancy and futility.

John Gardner said, "We are all faced with wonderful opportunities brilliantly disguised as insoluble problems."

Ovarian cancer is not insoluble. Perhaps, by adding a small segment at a time, the total picture will emerge to the benefit of our patients. Remember the PMPO Syndrome!

**Reference**

1. Kistner, RW: Gynecology, Principles and Practice. Second edition. Chicago, Ill., Year Book Publishers, 1971.

---

**Announcement**

Funds from the National Cancer Institute and the American Cancer Society have been allocated to the National Surgical Adjuvant Breast Project (NSABP) for appropriation to institutions—medical schools, medical centers, clinics, private hospitals, etc.—who render treatment to primary breast cancer patients and who are willing to participate in protocols designed (1) to evaluate the merits of radical and total (simple) mastectomy with and without irradiation, or (2) to evaluate the worth of prolonged chemotherapy. Those interested should contact:

*Bernard Fisher, M.D.*
*Chairman*
*National Surgical Adjuvant Breast Project*
*University of Pittsburgh*
*Pittsburgh, Pennsylvania 15213*