EDITORIAL

Oophorectomy versus salpingectomy: a convergence of ideas

Seventeen years. That is the average time before evidence-based medical ideas take hold in community practice. The findings of a study published in this issue of *Menopause* suggest a slight trend toward conservation of ovaries at the time of hysterectomy for benign disease. Nevertheless, it seems that gynecologists continue to perform “prophylactic oophorectomy” even in young women. Hopefully, new ideas about the continued function of menopausal ovaries, the origin of most “ovarian” cancers in the fallopian tube, and the newly suggested role for salpingectomy in ovarian cancer prophylaxis will challenge and change the dogma accompanying prophylactic oophorectomy.

In the study published here, 32% of the gynecologists surveyed performed oophorectomy in women younger than 51 years. Another recent report from a 600-hospital database showed that the rate of prophylactic oophorectomy declined slightly in 2002 after the publication of the initial results from the Women’s Health Initiative. This decline was probably prompted by women’s wishes to keep their ovaries and hormones rather than face the publicized risks associated with exogenous hormones. However, by 2010, approximately 35% of women aged 45 to 49 years still underwent oophorectomy. Despite the continued practice of oophorectomy, evidence for ovarian conservation has been accumulating.

Prophylactic procedures should follow two guidelines: (1) there is a reasonable expectation that the procedure will result in a net benefit to the patient, and (2) without the intervention, the individual would be at high risk for developing the disease. The concept of prophylactic oophorectomy—proposed in the 1970s to prevent the subsequent development of ovarian cancer—leads to approximately 250,000 US women undergoing bilateral oophorectomy at the time of hysterectomy every year.

Studies first performed in the 1970s and later confirmed showed that the ovaries continue to produce androgens, which are converted into estrone, throughout a woman’s lifetime. Numerous studies suggest that endogenous estrogen was beneficial to the heart, bones, and brain. In 2005, a Markov model derived from previously published studies suggested that the health benefits of ovarian conservation might outweigh the very small risk of ovarian cancer with ovarian conservation. Subsequent publications from the Nurses’ Health Study database found that, during 28 years of follow-up, 0.9% of women died of ovarian cancer. Yet, women who had had hysterectomy and oophorectomy had a higher risk of dying of coronary heart disease (10%; relative risk [RR], 1.23), colorectal cancer (3.4%; RR, 1.49), lung cancer (9.3%; RR, 1.29), and all causes (RR, 1.13) compared with women who had ovarian conservation. Furthermore, at no age was oophorectomy associated with increased survival. These detrimental effects on health outcomes were not seen, however, in women who had oophorectomy but took estrogen after the surgical procedure.

Studies at the Mayo Clinic had similar findings. Other Mayo Clinic studies of the same population showed higher risks of anxiety/depression, dementia/cognitive impairment, and parkinsonism in women who had their ovaries removed. As such, evidence suggests that removal of healthy ovaries does not meet the definition of a prophylactic intervention.

Early responses to the Nurses’ Health Study and Mayo Clinic studies still advocated oophorectomy, accompanied by prescriptions for menopausal hormone therapy and statins to ward off harmful cardiovascular effects. Nevertheless, 5 years after the first prescription, only 17% of women continue to take estrogen, and only 18% of women continue to take statins 1 year later. These numbers are overstated because they do not include women who never see a doctor, women who see a doctor but do not get a prescription, or women who get a first prescription but never fill it. Consequently, this strategy is not likely to work.

Recently, the true origin of “epithelial ovarian cancer” has been questioned. Interestingly, the ovary contains no epithelial cells. Precursor lesions, termed serous tubal intraepithelial cancer, were originally found in the fallopian tubes of BRCA-positive women and, subsequently, in non-BRCA women. These lesions have p53 mutations similar to those found in high-grade serous “ovarian” cancers. No such precursor lesions have ever been found in the ovary, nor have p53 mutations been found in the low-grade, more indolent, treatable cancers found inside the ovary. Astonishingly, the deadly form of ovarian cancer does not come from the ovary. Most aggressive “ovarian” cancers are, in fact, tubal cancers.

After this discovery, bilateral salpingectomy was proposed as an alternative to oophorectomy. This strategy removes the source of aggressive cancers and conserves functioning ovaries. Of concern was that one might once again be setting off down the road of unintended consequences; would removing the tubes compromise collateral circulation and predispose the ovaries to early failure? A recent study though found that before and 3 months after hysterectomy and salpingectomy, 79 women had similar sonographically measured antral follicle counts, peak systolic velocities, mean ovarian diameters, and blood levels of antimüllerian hormone and follicle-stimulating hormone. Based on all of the evidence and following the lead of the Society of Gynecologic Oncologists of Canada, the Society of Gynecologic Oncologists recently...
published practice guidelines suggesting that “for women at population risk (average) for ovarian cancer, salpingectomy should be considered (after completion of childbearing) at the time of hysterectomy, in lieu of tubal ligation, and also at the time of other pelvic surgery.”

This strategy is being closely studied in Canada.

There is now a convergence of ideas: oophorectomy has adverse long-term health consequences for women, and ovarian conservation should be encouraged for women at average risk for ovarian cancer; most women choose not to take menopausal hormone therapy; aggressive “ovarian” cancer seems to be “tubal” cancer; and, salpingectomy may prevent many of these horrible deaths. With faster dissemination of information, via the Internet, to physicians and women, acceptance of this new paradigm will hopefully take fewer than 17 years.

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REFERENCES


