Opportunistic Salpingectomy for Ovarian Cancer Prevention: A Call for Action

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Ovarian cancer (OC) is the leading cause of gynecologic death and the 5th leading cause of death among women. Recent research indicates fallopian tubes to be the origin of most OCs. Moreover, population-based studies have shown a decrease rate of OC in women with previous salpingectomy, a procedure that is safe, easy-to-perform, inexpensive, and fast. Since 2010, surgical gynecologic practice has evolved; currently, many gynecologic societies recommend elective bilateral salpingectomy as a strategy to decrease OC risk in a population of non-high-risk women undergoing gynecologic surgery and in whom reproductive desire is complete. The gynecologic surgical community has welcomed and fully embraced this newly recommended practice; however, other abdominal surgeons (ie general surgeons or urologists), are not routinely performing this easy and effective cancer prevention procedure. This article calls on all abdominal surgeons to consider and discuss, at the time of abdominal surgery, elective salpingectomy with patients having completed reproductive desire.

Epithelial OC is the leading cause of death from gynecologic malignancy and is the 5th leading cause of death among women.[1] High-grade serous carcinoma is the most common histologic type. Because OC presents with unspecific symptoms, it mostly results in delayed identification[2]; by the time it is diagnosed, OC is at advanced stages and has poor prognosis. Despite decades of research, there are no effective means of screening for OC and newly implemented aggressive therapy (eg hyperthermic intraperitoneal chemotherapy[3]) only add 3.5 months to recurrence-free intervals and 11.8 months to overall survival. Faced with these dire facts, new prevention strategies are of the utmost importance.

Most OCs originate in the fallopian tube[4]; therefore, the timely performance of salpingectomy demonstrates a reduction in the risk of developing OC in women of average risk.[4] Since 2010, many gynecologic societies encourage the consideration of opportunistic salpingectomy (eg the complete removal of fallopian tubes from the uterine cornua to the fimbria through the mesosalpinx at the time of benign gynecologic surgery, sterilization, or cesarean section for OC prevention).[5] In fact, prophylactic bilateral salpingectomy (PBS) at the time of hysterectomy implies minimal additional surgical time and does not significantly increase the risk of operative or perioperative complications, hospital lengths of stay, or readmission rates.[6] Despite this, concerns about the potential impact of PBS on ovarian reserve and risk for premature menopause have been raised. Currently available data show that salpingectomy has no impact on ovarian function; however, no long-term studies have been published. Wang and colleagues observed no significant differences in anti-Müllerian hormone, follicle-stimulating hormone, luteinizing hormone, estradiol, or three-dimensional antral follicle count in women undergoing hysterectomy alone compared with those undergoing hysterectomy with salpingectomy, assessed 9 months after hysterectomy.[7] Similarly, Hanley and colleagues reported no significant differences in indicators of early-onset menopause (eg physician visits for menopause or initiation of hormone replacement therapy), after opportunistic salpingectomy.[8] This evidence clearly demonstrates that PBS does not damage the ovarian reserve nor does it impact onset of menopause; potential reluctance to opportunistic salpingectomy is, at the moment, baseless.

In only 5 years, opportunistic salpingectomy for the prevention of OC has been adopted by gynecologists. In the US, opportunistic salpingectomy rates increased

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10-fold by 2015 and in a survey of *American College of Obstetricians and Gynecologists* members, around 77% of respondents reported performing PBS at the time of hysterectomy more than 75% of the time.[9] This new approach translates into a positive impact on both patients' survival and also on healthcare systems. It offers a win-win situation, preventing deaths and reducing healthcare costs all at once. Although no prospective studies estimate OC risk reduction with opportunistic salpingectomy in the general population, a nationwide, register-based, case-control study in Sweden observed the overall risk of OC reduced to 0.81 (type I, including high-grade serous carcinoma) and 0.61 (type II) after performing bilateral salpingectomy.[10] Naumann and colleagues created a model to simulate the risk of OC and OC mortality to calculate lifetime costs associated with salpingectomy and OC. They estimated that opportunistic salpingectomy will be effective in reducing the number of OC cases in the future, thereby reducing healthcare costs and mortality. According to their model, opportunistic salpingectomy at the time of tubal ligation reduces OC mortality by 8.13%, and opportunistic salpingectomy at the time of hysterectomy reduces OC mortality by 6.34%, a combined decrease of 14.5%. Therefore, opportunistic salpingectomy would prevent 1,854 OC deaths and save $392 million per year.[11]

An important step forward for OC prevention includes discussion with patients about the option of opportunistic bilateral salpingectomy at the time of any abdominal surgery (eg cholecystectomy, appendectomy) (Fig. 1). Tomasch and colleagues demonstrated that opportunistic salpingectomy at the time of laparoscopic cholecystectomy implies median additional operating time of 13 minutes and no intra- or postoperative complications attributable to salpingectomy.[12] Importantly, Matsuo and colleagues showed evidence that opportunistic salpingectomy at the time of cholecystectomy may also be a cost-effective strategy to prevent OC among women of average risk.[13] In the absence of definitive long-term data, opportunistic salpingectomy is safe, effective, and feasible at the time of any abdominal surgery with no extra port placement as an OC prevention strategy.

Preventing OC will require neither difficult changes in management nor life-changing efforts. Although more data from prospective studies may improve the impact of PBS in the prevention of OC, currently, we have enough knowledge to call on abdominal surgeons to support this call for action, encouraging them to consider and discuss with the patient the option of performing bilateral salpingectomy at the time of any elective abdominal surgery. Finally, we encourage this process be performed in conjunction with offering comprehensive preoperative information and counseling to female patients.

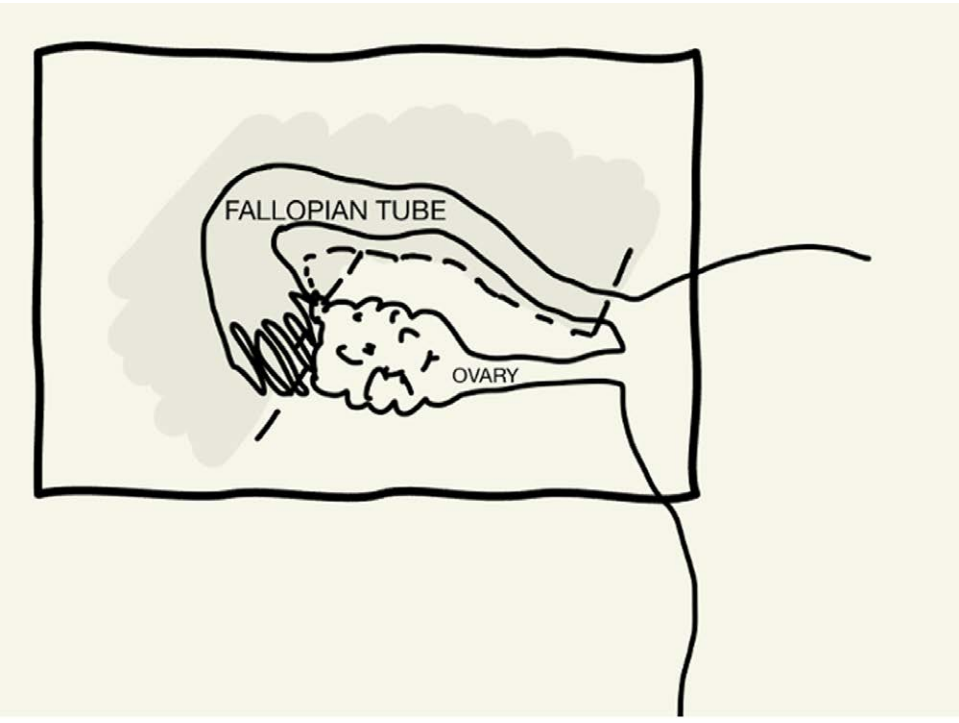

Figure 1. Salpingectomy technique. Dashed line indicates where tissue is cut.

Author Contributions

Conceptualization: Rius, Carugno, Carmona
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