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Opportunistic salpingectomy versus tubal ligation. A review of current strategies for ovarian cancer prevention

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Abstract

Introduction and purpose. Ovarian cancer is a leading cause of gynecological mortality due to late diagnosis. Modern evidence shows that high-grade serous ovarian cancer (HGSC) often originates in the fallopian tube from serous tubal intraepithelial carcinoma (STIC) lesions. This supports opportunistic salpingectomy as a superior preventive strategy over traditional tubal ligation. This study compares both methods regarding oncological efficacy, surgical safety, and impact on ovarian reserve.

Material and method. In January 2026, a comprehensive narrative review was conducted using PubMed, Google Scholar, and JEHS archives. The analysis focused on 20 key publications (2017–2025) comparing salpingectomy and tubal ligation, focusing on HGSC prevention, Anti-Müllerian hormone (AMH) levels, and cost-effectiveness.

Results. Population data indicate that salpingectomy is more effective, reducing HGSC risk by 65–80%, compared to 24–28% for tubal ligation. Surgical analysis shows salpingectomy extends operative time by 8–15 minutes but does not increase perioperative risk. Systematic

reviews show no significant decrease in AMH levels post-surgery, though a potential risk of exacerbating genitourinary syndrome was noted. Economic analyses confirm that opportunistic salpingectomy is highly cost-effective by avoiding advanced cancer treatment expenses.

Conclusions. Opportunistic salpingectomy is the gold standard for prevention in women completing their reproductive plans. It is safe, preserves hormonal function, and offers superior protection compared to tubal ligation. Preoperative counseling regarding quality of life is recommended.

Key words: opportunistic salpingectomy, tubal ligation, ovarian cancer, serous tubal intraepithelial carcinoma, high-grade serous carcinoma, Anti-Müllerian hormone, endometriosis.

1. Introduction and purpose

Ovarian cancer has remained a challenge for modern gynaecological oncology for years. It ranks first in the statistics of mortality from female reproductive system cancers worldwide. Despite advances in surgical techniques and the introduction of modern therapies, the prognosis for patients remains unsatisfactory, with a mortality rate of nearly 66% in this group of patients [4]. The main cause of high mortality is the course of the malignancy. For a long time, the cancer develops without causing any noticeable symptoms. The lack of typical symptoms in the early stages of development and the lack of effective and readily available screening methods mean that over 70% of cases are diagnosed at an advanced clinical stage [4, 5] .

The traditional model of tumor development, which remained prevailing for the last several decades, postulated that epithelial ovarian malignancies derived directly from the ovarian surface epithelium [20]. However, transformative discoveries in the fields of molecular biology and pathomorphology have offered new insights regarding the genesis of this malignancy [5, 17, 20]. Contemporary medical evidence indicates that the most aggressive form of ovarian cancer, specifically high-grade serous carcinoma, originates within the fallopian tube epithelium [16, 17]. This modern conceptualization assumes that precursor lesions, classified as serous tubal intraepithelial carcinoma, are situated in the distal segment of the fallopian tube, particularly within its fimbriated end. These lesions serve as the point of origin for ovarian tumors, as they harbor cells with significant genetic mutations—most notably within the tumor

protein p53 gene—and demonstrate genomic instability comparable to that of fully developed ovarian tumors [15, 16, 20].

The evolution of medical knowledge has directly influenced the modification of previous strategies regarding ovarian cancer prevention. For many years, tubal ligation served as the standard surgical sterilization method offered to women seeking permanent contraception. Research has confirmed that tubal ligation reduces the risk of ovarian cancer by approximately 24% to 28%, a phenomenon primarily attributed to the creation of a mechanical barrier against retrograde menstruation [1, 19]. According to the theory of retrograde menstruation, the developmental process of endometrioid ovarian cancer may be initiated by the migration of healthy cells that undergo transformation within the ovary due to inflammation and oxidative stress, or through the direct dissemination of cells already undergoing neoplastic changes [1]. This supports the hypothesis that malignant cells enter the pelvic cavity via reflux, where they subsequently evolve into ovarian tumors. However, it is essential to emphasize that tubal ligation leaves the distal segments of the fallopian tubes within the patient's body, which are the specific sites where the initiation of most serous ovarian cancers occurs [7].

It is noteworthy that opportunistic salpingectomy enables the complete excision of the structures in which malignancy originates without triggering the detrimental consequences of premature menopause [12, 13]. Premature menopause, arising from the surgical extraction of the ovaries, involves a sudden interruption in the synthesis and release of essential female sex hormones. Unlike the natural menopause process, which unfolds over several years and permits a gradual physiological adaptation, surgical menopause exerts a nearly instantaneous effect. Retaining the ovaries during the removal of the fallopian tubes alone supports that the body's hormonal capacity remains at a level similar to the pre-operative state. As a result, the patient gains the advantage of oncological protection without experiencing disruptions to her hormonal regulation [12, 13].

Analyses conducted on large cohorts of studied patients also suggest that the complete removal of the fallopian tubes is associated with significantly greater efficacy in reducing the probability of developing a malignancy compared to older, traditional methods. While tubal ligation only hinders the transport of oocytes to the uterus, salpingectomy leads to the removal of the specific site where neoplastic cellular changes most commonly occur. This constitutes the primary

argument for proponents of this method. Consequently, the surgical removal of the fallopian tubes is currently considered significantly more predictable and safer from a long-term perspective [5, 7, 9].

Notwithstanding the compelling arguments, the establishment of opportunistic salpingectomy as a clinical standard necessitates rigorous analysis and assessment concerning the surgical safety of the procedure. Additionally, the effect on the ovarian reserve, evaluated by monitoring variations in Anti-Müllerian hormone concentrations, remains a critical consideration. It is also imperative to account for the long-term implications for the patients' quality of life, including potential risks of genitourinary syndrome of menopause or climacteric disturbances [2, 3, 12]. Despite certain limitations inherent to tubal ligation, research highlights the superior cost-effectiveness of salpingectomy when performed not only within the field of gynecology but also during other abdominal interventions, such as radical cystectomy [11]. Furthermore, formal guidelines issued by professional organizations, such as the American College of Obstetricians and Gynecologists, increasingly advocate for salpingectomy as the preferred modality for permanent surgical sterilization in women who have completed their reproductive plans [6, 19].

The emergence of various uncertainties alongside recent scientific breakthroughs necessitates a comprehensive systematization of knowledge regarding the most effective strategies for ovarian cancer prevention. Consequently, the primary objective of this thesis is to provide a comparative analysis of two predominant preventive modalities: opportunistic salpingectomy and traditional tubal ligation. This review specifically focuses on the oncological protective efficacy of both interventions, their safety regarding the patient’s endocrine health, and the potential socio-economic benefits they offer to the healthcare system. The study intends to present evidence-based arguments to facilitate the clinical decision-making process in selecting the optimal method of cancer prophylaxis, incorporating the most recent literature published between 2017-2025.

2. Material and methods

The developmental process of this review article was based upon a comprehensive narrative review of international medical literature. The central methodological objective was to distinguish publications with the highest level of scientific validity, which provide rigorous

clinical, epidemiological, and economic evidence comparing opportunistic salpingectomy with traditional tubal ligation for the purpose of ovarian cancer prophylaxis.

2.1. Search strategy and databases

The literature search was conducted in January 2026. Three fundamental and complementary databases were utilized, enabling a comprehensive cross-section of data—ranging from global multicenter studies to analyses specific to the Central and Eastern European region:

1. Medical Literature Analysis and Retrieval System Online (PubMed). The Medical Literature Analysis and Retrieval System Online database served to identify the vast majority of the analyzed works. It was within this repository that publications concerning the clinical efficacy of procedures, surgical safety, and the physiological impact of surgery on the female body were retrieved, alongside official recommendations from international medical organizations [4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20].
2. Google Scholar. This tool was employed as a secondary resource to ensure that no significant scientific contribution was overlooked. It facilitated access to full-text articles and supplementary chapters in medical textbooks, which expanded upon the knowledge acquired during the primary search phase.
3. Journal of Education, Health and Sport. Searching this specific database was indispensable for incorporating the scientific contributions of researchers from Poland and Ukraine. Through this platform, significant data regarding the correlation between endometriosis and neoplastic diseases were included, as well as information on how gynecological surgeries influence the long-term well-being of women [1, 2, 3].

2.2. Selection criteria and timeframes

Specific timeframes were adopted for the comparison of opportunistic salpingectomy and tubal ligation as techniques capable of mitigating the risk of ovarian cancer development. The investigation focused on publications released between 2017-2025. This selection was dictated by the dynamic expansion of knowledge regarding the development of serous tubal

intraepithelial carcinoma in recent years. The inclusion of research from 2025 was essential for presenting the most advanced discoveries regarding the analyzed issue [4, 11, 15, 18].

In the literature selection framework, specific criteria were established to identify the most pioneering scientific publications. The analysis primarily incorporated clinical studies that focused on a direct comparison of the outcomes between opportunistic salpingectomy and tubal ligation. Systematic reviews and meta-analyses also constituted a highly significant element, as they allowed researchers to evaluate how the complete removal of the fallopian tubes influences the ovarian reserve, based on fluctuations in Anti-Müllerian hormone concentrations [12].

Additionally, the compilation incorporated cohort studies in which the health status of participants was monitored over several years following the clinical intervention [5, 7]. The analysis also encompassed research assessing financial viability, specifically the cost-effectiveness of the implemented preventive procedures [4, 10, 14]. Furthermore, attention was directed toward official clinical guidelines and consensus statements issued by prominent medical organizations, such as the American College of Obstetricians and Gynecologists and the Society of Gynecologic Oncology [18, 19].

Individual case reports were excluded from the selection process, as their specific nature limits the formulation of generalized conclusions. Furthermore, articles for which the full-text version was unavailable or those lacking a unique digital object identifier were also rejected. The final category of excluded works comprised publications focusing exclusively on the technical intricacies of the surgical procedure itself, without addressing aspects related to oncological prophylaxis.

2.3. Keywords and the analysis process

The identification of pertinent scientific articles was executed through the application of standardized medical terminology and English-language keywords. The principal expressions utilized during this procedure encompassed the following phrases: *opportunistic salpingectomy, tubal ligation, ovarian cancer prevention, serous tubal intraepithelial carcinoma, high-grade serous carcinoma, Anti-Müllerian hormone, quality of life after salpingectomy, endometriosis,* and *cost-effectiveness*. Such a meticulously curated selection of terms enabled a highly targeted literature search, facilitating the discovery of publications addressing both the mechanisms of

carcinogenesis and the clinical consequences and economic viability of the two surgical interventions under consideration.

Following an initial selection of approximately one hundred and forty articles, a screening process was conducted based on the analysis of titles and abstracts. In the subsequent stage, twenty key publications were identified, which provided the substantive foundation for this study [1–20]. The selected texts were subjected to critical analysis, and the data they contained were synthesized to formulate coherent conclusions. The bibliography was prepared using the consecutive numbering system (Vancouver style), which ensures the clarity of in-text references and complies with the standards established by the International Committee of Medical Journal Editors.

3. Description of the state of knowledge

3.1. Pathogenesis of ovarian cancer. The role of the fallopian tube in tumor development

In contemporary gynecology, the established understanding of the origin of epithelial ovarian malignancies has undergone a significant transformation. The traditional hypothesis postulated that high-grade serous carcinoma originated from the ovarian surface epithelium. However, this perspective has been superseded by a concept according to which the secretory epithelium of the fallopian tube—specifically its distal, fimbriated portion—constitutes the primary site for the formation of precursor lesions [17, 20].

This multi-phasic process begins with clusters of cells harboring tumor protein p53 mutations. This phenomenon serves as an early marker of deoxyribonucleic acid damage within morphologically normal fallopian tube cells. The subsequent stage involves the development of serous tubal intraepithelial carcinoma, which acts as a precursor for the progression of invasive ovarian cancer [16]. Molecular investigations have demonstrated that serous tubal intraepithelial carcinoma lesions are present in nearly 70% of high-grade serous carcinoma cases, providing robust evidence of their significant etiological role [16].

Recent reports from 2025 shed light on the intricate immunological microenvironment of the fallopian tube. It has been demonstrated that neoplastic precursors promote local

immunosuppression through the overexpression of the human leukocyte antigen-E protein. This mechanism allows pre-malignant cells to remain unrecognized by the immune system, consequently limiting the anti-tumor activity of natural killer cells [15]. This discovery explains why the transformation process within the fallopian tube may persist for decades before the metastasis of malignant cells into the peritoneal cavity occurs [15, 17].

3.2. Oncological efficacy of salpingectomy versus tubal ligation

The central research inquiry of this thesis involves a comparison of the clinical effectiveness of opportunistic salpingectomy and traditional tubal ligation. The analysis conducted by Hanley and colleagues [7] highlights the superiority of complete excision of the fallopian tubes over hysterectomy alone or tubal ligation. In this investigation, nearly 26 000 women who had undergone salpingectomy were compared with a cohort of over 32 000 patients who had undergone either a hysterectomy or tubal ligation. The study results revealed a total absence of serous ovarian cancer cases in the group that received a salpingectomy, even though statistical models had predicted the occurrence of more than five such cases. Furthermore, the overall incidence of all epithelial ovarian malignancies in this group was significantly lower than expected. To rule out potential confounding factors, the researchers also monitored the incidence of breast and colorectal cancers; in those instances, the outcomes were consistent with the initial projections. This confirms that the removal of the fallopian tubes specifically, rather than external variables, provided the patients with robust protection against the progression of the malignancy.

It is also noteworthy that investigations regarding the initial stages of carcinogenesis have demonstrated that in women with a genetic predisposition, oncological lesions most frequently develop within the distal segments of the fallopian tubes [19]. Traditional tubal ligation provides a level of protection ranging from 24% to 28%, which is primarily attributed to the mechanical obstruction of cellular migration from the uterus into the peritoneal cavity. However, the complete excision of the fallopian tubes demonstrates substantially higher efficacy. Analyses performed on a large patient cohort have established that this procedure reduces the risk of developing ovarian cancer by as much as 65%. This high degree of protection has been validated through long-term observations spanning more than thirty years, rendering this modality significantly more effective than conventional sterilization [19].

A similar phenomenon is observed in the analysis by Giannakeas and colleagues [5] regarding salpingectomy and the risk of ovarian cancer development in Ontario. However, the authors note that due to the rarity of ovarian cancer incidence, statistically significant conclusions can only be drawn after more than ten years of observation [5].

Nevertheless, available evidence strongly suggests that bilateral salpingectomy reduces the oncological risk by over 40%, rendering it an appropriate method for women seeking permanent sterilization [6]. Runnebaum and colleagues [8] as well as Pölcher and colleagues [18] confirm that in Germany, opportunistic salpingectomy has already become the clinical standard during hysterectomies performed for benign indications, superseding older prophylactic methods due to their lower effectiveness [8, 18].

3.3. Surgical safety and technical aspects

For salpingectomy to be recognized as a standard medical procedure for the prevention of ovarian cancer development, it is necessary to confirm its safety. Rufin and colleagues [9] and Subramaniam and colleagues [10] analyzed the course of opportunistic salpingectomy during cesarean section. These studies demonstrated that salpingectomy extends the operative time, albeit to a minor degree, which is clinically acceptable. Furthermore, it was noted that the prolongation of the surgical duration by eight or fifteen minutes, respectively, is not associated with an increase in the number of perioperative complications [9, 10]. Thus, this procedure does not differ significantly from traditional tubal ligation regarding the safety of the intervention itself [9, 10].

Opportunistic salpingectomy is also gaining prominence during the performance of radical cystectomy [11]. This procedure facilitates a significant decrease in the probability of ovarian cancer while concurrently maintaining the ovary as a functional endocrine organ. It is considered a safe alternative to standard oophorectomy, thereby mitigating the risk of premature menopause, osteoporosis, and cardiovascular diseases in female patients [11, 13, 19].

3.4. Ovarian reserve and the impact on hormonal balance in women

A significant complication that may arise from opportunistic salpingectomy is the impairment of the ovarian vascularization. This may result in premature menopause by diminishing the ovarian reserve. The ovarian reserve defines the total supply of oocytes possessed by a woman

[12]. This is a parameter that physiologically decreases as time progresses. In medical practice, the assessment of this reserve primarily serves to predict the timing of the onset of menopause. Measuring Anti-Müllerian hormone, in the context of gynecological surgeries, allows for the verification of whether the procedure compromised the ovarian blood supply. Since it is not possible to precisely determine the exact number of oocytes, specialists utilize surrogate markers. Currently, Anti-Müllerian hormone is considered the most reliable indicator, as its concentration correlates with the number of follicles capable of development.

Diagnostics are supplemented by the assessment of the antral follicle count performed during an ultrasonography. Furthermore, the measurement of follicle-stimulating hormone levels is utilized in diagnostics. However, this latter parameter is regarded as less sensitive, as it changes only during the later phase of ovarian aging. It must be emphasized that research indicates that the removal of the fallopian tubes does not negatively influence these indicators, which confirms the hormonal safety of this procedure [12]. Consequently, there is a lack of robust evidence suggesting that opportunistic salpingectomy significantly affects Anti-Müllerian hormone levels, which represent a definitive marker of the ovarian reserve status.

The analysis of the study by van Lieshout and colleagues [13] leads to similar conclusions. Data analysis concerning women who underwent salpingectomy demonstrates that the complete excision of the fallopian tubes does not result in a reduction of Anti-Müllerian hormone levels in a manner that would hold clinical significance. This implies that any potential, minimal fluctuations in the concentration of this hormone following the procedure do not translate into a deterioration of ovarian function, nor do they accelerate the onset of menopause. It is noteworthy that these findings were corroborated in studies conducted at various intervals, ranging from six weeks to six months after the completion of the surgery. Although the statistical confidence interval tends to be wide, which arises from individual variations among patients, the overall conclusion remains constant—this procedure is safe for the ovarian reserve [13].

Nonetheless, it is imperative not to overlook research discussing the risks associated with the excision of the fallopian tubes [2, 3]. It has been suggested that a subset of women who undergo hysterectomy alongside salpingectomy experiences an intensification of the genitourinary syndrome of menopause and climacteric disturbances [2, 3]. Consequently, while opportunistic

salpingectomy is considered safe and does not markedly impact the follicular reserve, patients require postoperative monitoring to evaluate their quality of life. The potential introduction of hormonal replacement therapy in the follow-up period should also be taken into account [2, 13].

3.5. Cost-effectiveness of the procedure

The implementation of new medical standards depends not only on their clinical efficacy but also on whether their application yields tangible financial benefits. Economic analyses permit the evaluation of whether funds allocated to early prophylaxis will enable the healthcare system to avoid significantly higher treatment expenditures in the future.

Particularly relevant data in this regard were provided by Kather and colleagues in their publication [4]. Utilizing advanced mathematical modeling, these researchers demonstrated that the introduction of opportunistic salpingectomy during routine abdominal surgeries is financially advantageous. Their analyses indicate that this procedure can generate savings amounting to millions of euros annually across the entire healthcare system. The primary source of these savings is the avoidance of the substantial financial outlays associated with the treatment of oncological patients suffering from advanced ovarian cancer. Indeed, the costs of hospitalization, modern systemic therapies, and palliative care are many times higher than the marginal increase in surgical expenses associated with the additional removal of the fallopian tubes [4, 7, 14].

Venkatesh and his research team present a similar argument in their works [14]. They focused on comparing the costs of complete excision of the fallopian tubes with traditional tubal ligation in women undergoing a cesarean section. It was demonstrated that salpingectomy falls entirely within the accepted medical cost-effectiveness thresholds. Although this procedure requires slightly more time and precision from the surgeon, the final balance is decidedly positive due to a significant increase in the number of quality-adjusted life years [10, 14]. This indicator proves that patients undergoing salpingectomy gain more years spent in full health, without the necessity of facing a debilitating oncological disease, which makes this method significantly more economically viable than previous sterilization techniques [14].

4. Discussion

The information synthesized in this literature review indicates a progressive paradigm shift in the standards of ovarian cancer prophylaxis. A trend is emerging where traditional tubal ligation is being increasingly displaced by opportunistic salpingectomy. This transition is rooted in the fact that opportunistic salpingectomy, although a more radical intervention, offers a superior level of ovarian cancer prevention. Nevertheless, the discourse on the superiority of one modality over the other necessitates a multi-dimensional approach. It is essential to take into account the efficacy of the compared surgical interventions, their safety profiles, and their economic feasibility [4, 7, 19].

4.1. Differences in the efficacy of the procedures

One of the most significant conclusions resulting from the analysis is the near-total reduction in the risk of high-grade serous carcinoma following the application of salpingectomy, as most clearly demonstrated by the study of Hanley and colleagues [7]. The fact that no cases of high-grade serous carcinoma were recorded within a large cohort of patients who underwent opportunistic salpingectomy represents the strongest argument to date supporting the theory of the tubal origin of this malignancy [7, 17]. This, however, contrasts with the findings obtained by Giannakeas and colleagues in Ontario, where the risk reduction was less pronounced and failed to reach the level of statistical significance during a short observation period [5].

In analyzing these discrepancies, it is essential to direct attention to the so-called latency period. As highlighted in the research of Shih and colleagues [17] and Kyo and colleagues [20], the progression from early tumor protein p53 signatures to invasive ovarian cancer can span several decades. Given that opportunistic salpingectomy has only effectively become a widely adopted clinical standard within the last decade (as indicated by data from Germany [8]), the comprehensive advantages of its implementation may only be fully documented in fifteen to twenty years. Traditional tubal ligation, while offering lower levels of protection (approximately 24% to 28%), benefits from a substantially longer observation period in the scientific literature, which may temporarily impact the perceived efficacy of the method in older research [5, 19].

4.2. Controversies surrounding ovarian reserve and quality of life

A subject that elicits significant concern is the hormonal safety of salpingectomy. On one hand, analyses such as the study by Gelderblom and colleagues [12] and Cochrane reviews [13] provide evidence supporting the stability of Anti-Müllerian hormone levels following the procedure in question. Furthermore, it is indicated that when appropriate surgical technique and caution are maintained, the ovarian blood supply is not impaired to a degree that jeopardizes the follicular reserve [12].

On the other hand, reports published in the Journal of Education, Health and Sport by Proshchenko and colleagues [2, 3] cannot be ignored. Their research indicates a risk of the onset or intensification of genitourinary syndrome of menopause and climacteric disturbances in women who have undergone opportunistic salpingectomy. Consequently, despite the absence of significant interference with the hormonal balance, salpingectomy may influence the local distribution of blood in the area of the female reproductive organs, which is not always reflected in changes in hormonal concentrations [2]. This highlights the necessity for an individualized approach to the patient and reliable preoperative counseling that takes into account not only the benefits but also the potential impact on the comfort of sexual and urological life [3, 9, 12].

4.3. Economic and population aspects

The performance of salpingectomy does not always have to accompany gynecological operations, as confirmed by the analyses of Cerrato and colleagues [11] and Kather and colleagues [4]. Demonstrating that salpingectomy can be safely performed during cystectomy or other surgical interventions within the abdominal cavity opens the way to preventing the development of ovarian cancer in a broader group of women [4, 11].

The cost-effectiveness of such a solution, analyzed by Subramaniam [10] and Venkatesh [14], leaves no room for doubt: the prolongation of the operation by a dozen or so minutes and the marginal increase in the cost of the procedure are compensated by avoiding the immense expenditures associated with the treatment of advanced stages of high-grade serous carcinoma and the care of patients with unintended pregnancies. Indeed, the efficacy of opportunistic salpingectomy in achieving sterilization is higher than that of tubal ligation [10, 14].

4.4. Limitations and perspectives

Despite the favorable conclusions, one must not overlook the challenges arising from the nature of the available medical data. The majority of existing studies are retrospective in character; however, some investigations encompass a period of many years, which—given the slow progression of ovarian cancer—enhances the credibility and precision of the findings. Nonetheless, there remains a deficiency of data concerning the long-term impact of opportunistic salpingectomy on the age of natural menopause onset. Future research should prioritize the prospective assessment of patients' quality of life and refine the role of serous tubal intraepithelial carcinoma lesions within the fallopian tubes of women with average population risk, thereby allowing for improved stratification of patients who would benefit most from salpingectomy [15, 18, 20].

In conclusion, the discourse regarding the choice between salpingectomy and tubal ligation is shifting decisively in favor of salpingectomy as a more rational and effective method. In accordance with the consensus statement by Pölcher and colleagues [18] and the recommendations of the American College of Obstetricians and Gynecologists [19], opportunistic salpingectomy should currently be the standard offered to every woman who has completed her reproductive plans and is undergoing intra-abdominal surgery [18, 19].

5. Summary and conclusions

The analysis of methods for the prevention of ovarian cancer development facilitates the formulation of nearly unequivocal conclusions regarding the evolution of clinical practice standards. The transition from traditional tubal ligation toward opportunistic salpingectomy is not merely a technical modification; rather, it results from a progressively deeper understanding of the pathogenesis of high-grade serous carcinoma [4, 7, 20].

Main conclusions of the review

The primary conclusions derived from this review are as follows:

1. Oncological superiority.
   The total excision of the fallopian tubes eliminates the primary precursor foci, such as serous tubal intraepithelial carcinoma and tumor protein p53 signatures, which translates into a significantly more effective reduction of high-grade serous

carcinoma risk compared to tubal ligation, which reduces the risk only partially [7, 16, 19].

2. Hormonal safety.

   Opportunistic salpingectomy, when performed with correct surgical technique, does not impair the ovarian reserve as measured by Anti-Müllerian hormone levels. This allows patients to avoid the effects of premature menopause, which represents a key advantage over prophylactic oophorectomy [12, 13].

3. Clinical qualification.

   The opportunistic salpingectomy procedure should be routinely discussed and offered to every patient who has completed her reproductive plans and is undergoing surgery within the lesser pelvis or abdominal cavity (including hysterectomy, postpartum sterilization, or radical cystectomy) [8, 11, 18].

4. Quality of life.

   Despite the stability of hormonal markers, a segment of patients may experience an intensification of genitourinary syndrome of menopause symptoms. This necessitates postoperative vigilance and a readiness to implement local or systemic hormone replacement therapy to maintain a high quality of life [2, 3].

5. Economic efficiency.

   From a public health perspective, opportunistic salpingectomy is a highly cost-effective strategy. The expenses associated with additional operative time are minimal compared to the savings resulting from the prevention of advanced ovarian cancers [4, 10, 14].

In summary, opportunistic salpingectomy currently represents the gold standard for ovarian cancer prevention. It is recommended that scientific societies and healthcare institutions endeavor toward the full implementation of this procedure in routine clinical practice, concurrent with the pursuit of further prospective studies regarding the long-term impact of this intervention on the age of natural menopause onset.

Disclosure

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