



New frontiers of surgery in vulvar cancer: from butterfly incision to videoendoscopic surgery

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Comment on: Yang Y, Zheng J, Huang L, *et al.* Video-endoscopic radical inguinal lymph node dissection for a patient with vulvar cancer. *Gynecol Pelvic Med* 2020;3:4.

Received: 29 May 2020; Accepted: 10 June 2020; Published: 25 December 2020.

doi: 10.21037/gpm-2020-04

View this article at: <http://dx.doi.org/10.21037/gpm-2020-04>

Vulvar cancer (VC) is the most mistreated gynecological neoplasm, since it involves an elderly population that is difficult to treat for its “frailty”. Although surgery is the first treatment to consider, over time, the tumor gives to the surgeon few glories. The rarity of this disease leads to a lack of randomized studies and it is difficult to express a definitive judgment on the efficacy of the treatments (1,2).

Surgical treatment of VC is represented by radical vulvectomy combined with the bilateral inguinal lymph nodes dissection. In the past, the traditional surgical technique was based on the “butterfly” incision to the vulvo-inguinal area. This extreme demolition surgery was burdened with multiple complications. Currently it has been abandoned and replaced by the triple incision technique which involves a reduction of postoperative complications such as skin necrosis and infection with consequent improvement of quality of life (3,4).

Surgery is progressively approaching towards less aggression on the primary tumor as well as on the lymph nodes. The rationale for the use of more conservative techniques (tumorectomy, large excision, hemivulvectomy) is based on literature data indicating that the most important predictive factor for local recurrence is to obtain a tumor-free resection margin greater than 8–10 mm (5).

Together with the risk factors linked to the primary tumor, the lymph node status is considered one of the most important prognostic factors in VC with reduced survival (5-year global OS of 72% *vs.* 25–42% in case of positive lymph nodes) (6). The traditional approach to perform lymphadenectomy is through an incision parallel to the

inguinal ligament approximately 5 mm upward. Morbidity after inguinofemoral lymphadenectomy is impressive despite the type of primary tumor. The high morbidity mainly occurs because a large subcutaneous defect enhances the tension in the surrounding tissue and reduces the blood supply to the inguinal area after inguinofemoral lymphadenectomy (3). The inguinal incision can induce groin infection (5.6–39%), groin necrosis (6.5–18.8%), lymphocysts (1.9–40%), lymphatic fluid secretion and lymphedema (28–48.8%). Laparoscopy is recognized as a surgical technique that reduces complications compared to laparotomy and its application to inguinal lymphadenectomy has led to interesting results in terms of complications and aesthetics. Videoendoscopic inguinal lymphadenectomy (VEIL) avoids inguinal skin defects and has a minimal impact on the blood supply to the inguinal tissue. This promising technique reported a reduction of the incidence of morbidity in VC patients (7-9).

With VEIL, two types of endoscopic approaches are described based on the insertion's site of the trocars: (I) trocars inserted at the level of the lower limbs (limb subcutaneous approach: VEIL-L); (II) trocars inserted at the abdominal level (hypogastric subcutaneous approach: VEIL-H) (8). The data show an advantage with both techniques compared to open surgery in terms of reduction of post-operative hospital stay (7–13.6 *vs.* 11–22 days), skin complications in the groin area including skin necrosis (0%), wound dehiscence and skin infection (0–10%), lymphatic complications including lymphatic cysts, lymphatic fluid secretion and lymphedema (0–17%). The biggest advantage

of endoscopic access is characterized by a reduction in post-operative pain, a cosmetic effect and rapid healing for undergoing adjuvant therapy such as radiotherapy or chemotherapy. The disadvantages of VEIL are represented by the lengthening of surgical times and longer training (7).

Considering the two endoscopic surgical approaches it is difficult to say which is the most advantageous; both have their advantages in terms of surgical technique and therapeutic efficacy. The two techniques are to be used and adapted according to the characteristics of the patients. The technique with access to the lower limbs (VEIL-L) has a better exposure of the deep inguinal lymph nodes and allows an easier conservative surgery on the saphenous vein. The disadvantages include a more difficult lymphatic drainage of the lower limbs in case of bilateral lymphadenectomy (9). The technique with abdominal access (VEIL-H) is preferable in case of extending the lymphadenectomy at the iliac level, in obese patients; moreover bilateral lymphadenectomy is possible through four incisions in the abdominal wall, and one of the laparoscopic accesses can be used for easy insertion of the drain allowing the skin to adhere to the deep tissues. VEIL-H must be avoided in case of scarring of the lower abdomen due to technical difficulties in creating the subcutaneous tunnel (9).

The endoscopic approach in inguinal lymphadenectomy is a recent technique and the data in the literature show fewer complications and better quality of life but we must wait for the follow up oncological results before we can judge the technique as feasible and safe. Short-term results are not enough in oncology; indeed, we must be sure that the recurrence and mortality rate are not higher than those of the previous technique. The lack of safety of laparoscopic surgery has already been criticized for the tumors of the uterine cervix (LACC trial) (10). All measures to avoid neoplastic cell dissemination should be taken into consideration as well as low CO₂ flows, extracting lymph nodes in bags, and avoiding repeated leakage of trocars during surgery (11).

In order to reduce the complications related to systematic inguinal lymphadenectomy, the sentinel node (SN) procedure has been introduced for early-stage squamous cell carcinoma of the vulva in unifocal tumors with a tumor diameter of less than 4 cm and clinically not suspected nodes in the groin. The SN procedure is safe in a carefully selected group of patients, when performed according to a rigorous protocol in high volume centers, and when associated to careful follow-up (6,12). Moreover, given the superficiality and the easy accessibility of the SN

in VC, I remain slightly perplexed about the association between endoscopy and SN.

Finally, since VC is a rare disease, its surgical treatment should be centralized. The data show that in Europe only the few countries that have centralized the treatment, resulting in a wide heterogeneity and personalization of surgical management, have obtained the best oncological results.

Acknowledgments

Funding: None.

Footnote

Provenance and Peer Review: This article was commissioned by the editorial office, *Gynecology and Pelvic Medicine*. The article did not undergo external peer review.

Conflicts of Interest: Both authors have completed the ICMJE uniform disclosure form (available at <https://gpm.amegroups.com/article/view/10.21037/gpm-2020-04/coif>). AMP serves as an unpaid editorial board member of *Gynecology and Pelvic Medicine* from Aug 2020 to Jul 2022. The authors have no other conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/gpm-2020-04

Cite this article as: Perrone AM, De Iaco P. New frontiers of surgery in vulvar cancer: from butterfly incision to videoendoscopic surgery. *Gynecol Pelvic Med* 2020;3:40.