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Vulvo-vaginal reconstruction after radical excision for treatment of vulvar cancer: Evaluation of feasibility and morbidity of different surgical techniques

Violante Di Donato [a, *], Carlotta Bracchi [a], Emanuele Cigna [b], Lavinia Domenici [a], Angela Musella [a], Andrea Giannini [a], Francesca Lecce [a], Claudia Marchetti [a], Pierluigi Benedetti Panici [a]

[a] Department of Gynecologic-Obstetrical and Urologic Sciences, University "Sapienza" of Rome, Policlinico Umberto I Hospital, Rome, Italy
[b] Department of Plastic and Reconstructive Surgery, University "Sapienza" of Rome, Policlinico Umberto I Hospital, Rome, Italy

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ABSTRACT

Background: Vulvar cancer is a rare disease accounting for approximately 5% of female genital tract tumors worldwide. Currently surgery represents the mainstay alone or sometimes, in combination with chemo-radiotherapy, for locally advanced tumors and recurrent disease. However, significant physical and sexual impairment mostly due to anatomical distortion of external genitalia are a consequence of radical surgical treatment. Postoperative reconstruction after demolitive surgeries improves aesthetic and functional results, guarantees an adequate coverage of large tumors and assures safe surgical margin. The present study aimed to analyze feasibility and complication rates of fascio-cutaneous flap after excision for vulvovaginal malignancies.

Methods: PubMed (MEDLINE), Web of Science, and CINAHL were searched for records of validated vulvovaginal reconstructive techniques after demolitive surgery for vulvar cancer. All cohorts were rated for quality using a scoring method taking into account the design of the study, the sample size and quality of report of surgical data and complications.

Results: A total of 24 studies met all eligibility criteria for this systematic review. All the studies were realized between 1996 and 2015. The overall sample size was 443 patients. Two major group of flap according to type of movement were identified: Advancement Flap (*V-Y Gluteal Fold Flap; Medial Thigh Flap*) and Transpositional Flap *(Lotus Petal Flap; Gluteal Thigh Flap; Gluteal Fold Flap and Anterolateral Thigh Flap).* The overall complications rates reported for advancement (26.7% among 165 patients on 11 series) and transposition flaps (22.3% among 278 patients on 13 series) were comparable.

Conclusions: A tailored procedure, based on patients' characteristics, size and location of the defect is still the goal of a successful reconstructive surgery. Proper planning of the surgical procedures, knowledge of the different surgical options and technical skills are required in order to obtain reliable and satisfying results.

Contents

* Corresponding author. Department of Gynecology and Obstetrics Sciences and Urologic Sciences, University of Rome Sapienza, V. le Regina Elena, 324, 00161 Rome, Italy.
E-mail addresses: violante.didonato@uniroma1.it (V. Di Donato), carlotta.bracchi26@gmail.com (C. Bracchi), emanuele.cigna@uniroma1.it (E. Cigna), lavinia.domenici@uniroma1.it (L. Domenici), angela.musella@gmail.com (A. Musella), andreagiannini23@hotmail.it (A. Giannini), lecce.francesca@gmail.com (F. Lecce), claudia.marchetti@uniroma1.it (C. Marchetti), pierluigi.benedettipanici@uniroma1.it (P. Benedetti Panici).

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1. Background

Vulvar carcinoma is a rare malignancy accounting around 4% of all female genital cancers worldwide and 0.6% of all female cancer with almost 5000 new cases and more than 1000 deaths for year [1]. Globally, about 27,000 women are diagnosed each year with vulvar cancer. Within Europe, women in eastern and northern countries are at highest risk, while risk is lowest in western and southern countries [1,2]. In the last decades, the incidence trend has remained relatively stable. However, about 20% of patients are diagnosed less than 50 years of age, and more than half of cases are linked to high-risk HPV subtypes (HPV 16-18-31) [3–7].

Surgery alone is considered the mainstay of treatment in early stages vulvar cancer while is associated with radiation or chemotherapy for advanced disease [8–12]. Surgical treatment guarantees a good local control but is associated with complications or functional and anatomical impairments affecting sexual function and quality of life. Recently a more extensive surgical resection has been achieved in selected patients, thanks to reconstructive procedures that allow an anatomical reconstruction [13–17]. Among various types of flaps, the fascio-cutaneous ones are characterized by lowest donor site morbidity, easier feasibility, thus often made primarily by the gynecologic oncologist.

This study aimed to evaluate how different types of fascio-cutaneous flaps may be used in vulvovaginal reconstruction after vulvar surgery.

2. Material and methods

The population of this study included patients affected by advanced or recurrent vulvar malignancies undergoing vulvovaginal reconstruction with fascio-cutaneous flaps.

2.1. Data sources

We analysed English-language medical articles issued from 1996 to 2015 on PubMed MEDLINE using a combinations of keywords as “VULVAR CANCER”, “VULVAR RECONSTRUCTION”, “PLASTIC SURGERY”, “VULVAR FLAP”, “FASCIO-CUTANEOUS FLAPS”. References and “related articles” of the included manuscripts were hand searched to identify other potential relevant studies.

2.2. Study selection

All trials were selected and valued for methodological quality of study taking into account the design of the study, the sample size and quality of report of surgical data and complications. For each of above-mentioned criteria a different score was allocated and the sum of these marks gave an overall score used to select better designed trials (see Appendix A). Only studies exceeding the cut-off of 5 points were evaluated.

2.3. Terminology and classification

A “*flap*” is a unit of tissue transferred from a donor to a recipient site maintaining intact its own blood supply. The “*donor site*” is the original tissue (flap) location removed and used for transplant. The *“recipient site”* is the site where the graft or transplant material is positioned. It represents the open wound/soft tissue defect needing for coverage. Flaps have been classified according to Cormack and Lamberty classification [17] (see Appendix B).

2.4. Data extraction

The following parameters were used to evaluate post-operative complications: *Wound Dehiscence (WD)*, W*ound Infection (WI)*, *Wound Necrosis (WN)*, *Urinary problems (UP) (eg. Urinary Tract Infection –UTI, Acute Urinary Retention –AUR, etc.)*,