Annales de chirurgie plastique esthétique (2018) xxx, xxx—xxx

Available online at
ScienceDirect
www.sciencedirect.com

Elsevier Masson France
EM|consulte
www.em-consulte.com

TECHNICAL NOTE

# Triple flap technique for vulvar reconstruction

## *Technique des trois lambeaux pour la reconstruction vulvaire*

**R. Mercut [a], R. Sinna [a], R. Vaucher [a], P.A. Giroux [a], N. Assaf [a], A. Lari [b], S. Dast [a,*]**

[a] *Department of plastic reconstructive and aesthetic surgery, university hospital of Picardie, 80054 Picardie cedex 1, France*
[b] *Service de chirurgie plastique reconstructrice et esthétique, hôpital de la Croix Rousse, CHU de Lyon, 103, grande rue de la Croix-Rousse, Lyon, France*

Received 29 November 2017; accepted 15 March 2018

**KEYWORDS**
Vulvar cancer;
Reconstruction;
V-Y advancement flaps;
Pudendal perforator

**Summary**
*Objective.* — Perineal defects are encountered ever more frequently, in the treatment of vulvar cancers or abdominoperineal resection. The surgical treatment of vulvar cancer leads to significant skin defect. The aim of the reconstruction is not to provide volume but rather to resurface perineum. We propose a new solution to cover the extensive skin defect remaining after excision.
*Methods.* — We report 3 patients who underwent large excision for vulvar cancer, with lymph node dissection. For reconstruction, we performed 3 advancement flaps. Two V-Y flaps cantered on the infra-gluteal folds and based on pudendal perforator arteries were used to cover the postero-lateral parts of the defect. The third advancement flap from the superior aspect of the defect was a Y-V Mons pubis flap.
*Results.* — The defects were successfully covered by the 3 flap technique. The first patient suffered a non-union that slowly healed by secondary intention. For the other cases, we used the same technique, but applied negative pressure wound therapy on the sutures, with excellent results.
*Conclusion.* — The 3 flap technique is a simple and reliable method and the donor site morbidity is minimal. It can be realised without changing the position of the patient after tumour excision, and does not require delicate perforator dissection. This surgical option can be easily applied, allowing better management of these cases.


* Auteur correspondant. Department of plastic, reconstructive and aesthetic surgery, Amiens university hospital, 80054 Amiens cedex 01, France.
*E-mail address:* s.dast@hotmail.fr (S. Dast).

https://doi.org/10.1016/j.anplas.2018.03.007
0294-1260/

Please cite this article in press as: Mercut R, et al. Triple flap technique for vulvar reconstruction. Ann Chir Plast Esthet (2018), https://doi.org/10.1016/j.anplas.2018.03.007

**MOTS CLÉS**
Cancer vulvaire ;
Reconstruction ;
Lambeaux d'avancement en V-Y ;
Perforante pudendale

**Résumé**
*Introduction.* — Nous sommes fréquemment confrontés dans notre pratique à des pertes de substance périnéales, qu'elles fassent suite à une résection abdominopérinéale ou au traitement chirurgical des cancers de vulve. Le traitement chirurgical des cancers vulvaires aboutit à des pertes de substance cutanéomuqueuse larges. Le but de la reconstruction n'est pas d'apporter du volume mais plutôt de resurfacer le périnée. Nous proposons une solution simple et efficace pour couvrir ces pertes de substance après excision périnéale.
*Méthode.* — Nous rapportons le cas de trois patientes ayant bénéficié d'une exérèse large pour cancer vulvaire. Pour la reconstruction, nous avons réalisé trois lambeaux d'avancement. Deux lambeaux d'avancement en V-Y prélevés aux dépens des plis sous-fessiers et basés sur les perforantes pudendales ont été réalisés pour couvrir la partie postéro-latérale de la perte de substance. Le troisième lambeau était un lambeau d'avancement du pubis en V-Y et permettait de couvrir la partie supérieure de la perte de substance.
*Résultats.* — Les pertes de substance ont été parfaitement couvertes par la technique des trois lambeaux. Une patiente a présenté une légère désunion qui n'a pas nécessité de reprise chirurgicale. Pour les autres cas, nous avons appliqué une thérapie à pression négative sur les cicatrices avec d'excellents résultats.
*Conclusion.* — La technique des trois lambeaux est une méthode simple et fiable. La morbidité du site donneur est minime. Cette technique ne nécessite pas de changement de position après résection de la tumeur et ne nécessite pas de squelettiser la perforante. Cette option chirurgicale peut être facilement appliquée permettant une meilleure prise en charge des pertes de substance périnéales.


## Introduction

Perineal defects are encountered ever more frequently, in the treatment of vulvar cancers or abdominoperineal resection. Reconstructing the postoperative defects has two aspects: volume and surface. After abdominoperineal resection, the main objective is to fill the residual dead space to avoid seroma or hematoma formation. The pudendal flaps have established as an excellent solution to fill the volume defect. [1,2]. The surgical treatment of vulvar cancer lead to significant skin defect. The aim of the reconstruction is not to provide volume but rather to resurface the perineum. We propose a new solution to cover the extensive skin defect remaining after excision.

## Materials and method

We report three patients who underwent large excision for vulvar cancer.

For all these patients, biopsies were performed prior to any treatment. Imaging re-staging was negative. To choose the most effective treatment, we discussed these cases during a multidisciplinary team meeting.

The patients presented with large skin defects post excision which required reconstruction. We used three advancement flaps: 2 V-Y pudendal flaps and one pubic flap.

## Surgical technique

The patient was placed in the gynaecological position and a Foley catheter was placed. The excision was performed by the oncological surgeon with adequate margins for oncological safety. After the excision, a colour Doppler echography was performed to localize the intact pudendal perforators.

For reconstruction, we performed three advancement flaps (Fig. 1).

Two V-Y flaps designed on the infra-gluteal folds and based on pudendal perforator arteries were used to cover the postero-lateral parts of the defect. Dissection did not require finding the perforators because there was enough laxity to advance the flaps. The width of the flaps was adapted to each patient, so that it can be closed after mobilisation. We performed a thinning of the flap in the fascia superficialis layer, so that the result was a thin flap, adapted for the region.

The third advancement flap from the superior aspect of the defect was a Y-V Mons pubis flap. For two patients, the incisions were already present from the lymph node dissection by the oncologic surgical team. We did a supra-aponeurotic dissection, until we reached the umbilicus, which allowed us to advance the pubis. We applied progressive sutures between the flap and the underlying fascia to diminish the tension on the mucosal suture.

## Results

The first patient, 55 years old, presented with a 10 × 6 cm vulvar undifferentiated epidermoid carcinoma and bilateral inguinal lymph node invasion. The tumor was excised with 1 cm safety margins to leave a 12 × 9 cm defect and we performed a bilateral lymph node dissection. The defect was successfully covered by the 3 flap technique but the patient suffered a dehiscence at the superior aspect of the suture, that healed by secondary intention in 6 weeks. The patient was discharged after 30 days of hospitalization (Fig. 2). The second patient, 31 years old, presented with an advanced well differentiated epidermoid carcinoma with bilateral inguinal lymph node invasion. After excision with 1 cm safety

Please cite this article in press as: Mercut R, et al. Triple flap technique for vulvar reconstruction. Ann Chir Plast Esthet (2018), https://doi.org/10.1016/j.anplas.2018.03.007