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Surgical film

Endoscopic near infrared and indocyanine green to verify the viability of the subcutaneous flap for vulvar cancer

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HIGHLIGHTS

- The viability of the fasciocutaneous flap can be verified by intravenous infusion of 50 mg of Indocyanine Green.
- Verifying the vitality of the flap through an infrared laparoscopic optic is easy and cheap.
- After the use of this technique, easily reproducible, no post-operative complication was recorded.

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ABSTRACT

Introduction. Vulvar cancer often requires radical vulvectomy with subsequent vulvar flap. Approximately in 20–60% of cases, there are post-operative complications ranging from infection to flap necrosis that often require reoperation. Several methods have been described to verify the vitality of the flap, but these are often expensive and require specific machinery that is not generally present in a gynecological clinic. In this case report, we present a viability verification of V—Y fasciocutaneous advancement flap for vulvar reconstruction by Endoscopic Near-Infrared and Indocyanine Green.

Methodology. The patient was a 67-year-old woman with FIGO IB ≤ 4 cm squamous cell vulvar cancer with absence of inguinal lymphadenopathy. The lesion appeared about 35 mm from the lateral margin of the large left lip and extended to the left inguinocrural fold.
The patient underwent left inguinal lymphadenectomy and left radical hemivulvectomy with a left fasciocutaneous medial-thigh advancement flap.
For the flap evaluation, we endovenous administered 50 mg of Indocyanine Green diluted in 10 ml of saline solution. After 10 min we visualized the flap margin with a near-infrared laparoscopic view. The evaluation was repeated at the end of the surgical procedure and we confirmed the good vascularization of the flap.

Results. No early or late post-operative complications were obtained. There was no wound dehiscence, marginal necrosis or surgical site infection.

Conclusions. Verifying the viability of the vulvar flap using near-infrared laparoscopic optics was easy to use, reproducible and highly economical technique. This could be a reproducible alternative to other more expensive techniques.

1. Introduction

Vulvar cancer often requires radical vulvectomy due to the high percentage of relapses. Approximately in 20–60% of cases, there are post-operative complications ranging from infection to wound dehiscence, lymphocele and flap necrosis that often require reoperation [1].

To avoid these complications, different surgical techniques have been proposed to cover the missing area with flaps [2]. Several methods have been described to verify the vitality of the flap, especially in plastic surgery, but these are often expensive and require specific machinery that is not generally present in a gynecological clinic [3].

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Fig. 1. Vulvar cancer localization.

We present a case of viability verification of V—Y fasciocutaneous advancement flap for vulvar reconstruction by Endoscopic Near-Infrared and Indocyanine Green.

2. Patient and methods

The patient was a 67-year-old woman with FIGO IB ≤ 4 cm squamous cell vulvar cancer.

CT, MRI, and physical exam revealed an absence of inguinal lymphadenopathy. The lesion appeared about 35 mm from the lateral margin of the large left lip and extended to the left inguinocrural fold (Fig. 1).

The day before the surgery, the patient performed a Tecnezio-99 infiltration for the sentinel lymph node identification. No dye uptake in the groin was found on scintigraphy.

The patient, therefore, underwent left inguinal lymphadenectomy and left radical hemivulvectomy according to the guidelines in case of absence of sentinel node detection [4].

In the reconstructive surgical phase, we performed a left fasciocutaneous medial-thigh advancement flap. For the evaluation of the vascularization of the flap, we endovenous administered 50 mg of Indocyanine Green diluted in 10 ml of saline solution.

After 10 min we visualized the flap margin with a near-infrared laparoscopic view (Storz Endoscopic IMAGE 1SH3-link TC300 and Light source Storz D-light P 20133720). A dye uptake along the entire edge of the flap was noted. Furthermore, the perforating vessels on the surface of the flap were also evident.

We repeated the evaluation with near-infrared optics at the end of the surgical procedure (about 30 min after the first evaluation) and we confirmed the good vascularization of the flap both on the margin and on the perforating branches (Fig. 2).

3. Results

No early or late post-operative complications were obtained. There was no wound dehiscence, marginal necrosis or surgical site infection. No adjuvant therapy was necessary.

The patient stated satisfaction of the aesthetic level obtained.

4. Conclusions

Verifying the viability of the vulvar flap using near-infrared laparoscopic optics was an easy to use, reproducible and extremely economical technique. Although there are more sophisticated techniques to check the good condition of the flap, these machines are often not present in a gynecological clinic. This could be an extremely useful and reproducible alternative.

Author contribution section

Capozzi VA, Ceni V, Sozzi G, Cianciolo A, Pugliese M, Berretta R: Manuscript writing/editing

Gambino G: Data collection.

Declaration of Competing Interest

No financial support and no conflict of interest involve any of the authors.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ygyno.2019.06.018.

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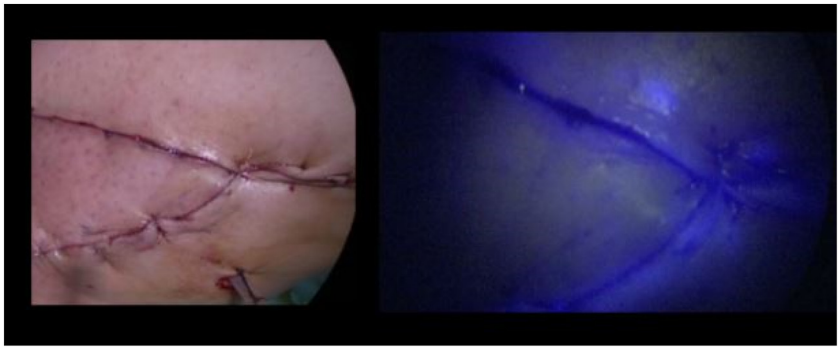

Fig. 2. Evaluation of the vulvar flap viability at the end of the surgical procedure.