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LATISSIMUS DORSI FLAP DISSECTION WITH J-PLASMA

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Introduction

The J-Plasma surgical energy device is a new FDA-approved multi-modal electrosurgical alternative to traditional monopolar, bipolar, or laser devices, that allows surgeons to cut, coagulate, fulgurate and dissect with use of a single instrument in both open and laparoscopic surgery (1). After its use in tissue dissection, surgeons have reported a reduction in serous exudates volume. Since its introduction, the surgical indication for the employment of this device increased constantly. Its use has been described for many surgical fields including general surgery, gynaecology, facial rejuvenation and skin contouring procedures (2).

In this poster, for the first time, we present a case of breast reconstruction with the LD muscolo-cutaneous flap using the J-Plasma surgical energy device for flap dissection, aiming to evaluate general and surgical outcomes related with the employment of this new surgical option, especially regarding the operative time and the serous fluid accumulation at donor site. We performed simultaneously a retrospective review of our casuistry including all the LD musculocutaneous flap performed in our institute for breast reconstruction during the past year, collecting data from the outpatient reports and the operative\anaesthesiologic charts.

Case Report

F 53-years-old referred to our department after performing a bilateral breast implant-based reconstruction with tissue expander in another Institute. As a result of adjuvant radiation treatment over the right breast, skin and subcutaneous tissues on that side were widely damaged and atrophic, and the patient suffered from chronic pain and skin inflammation.

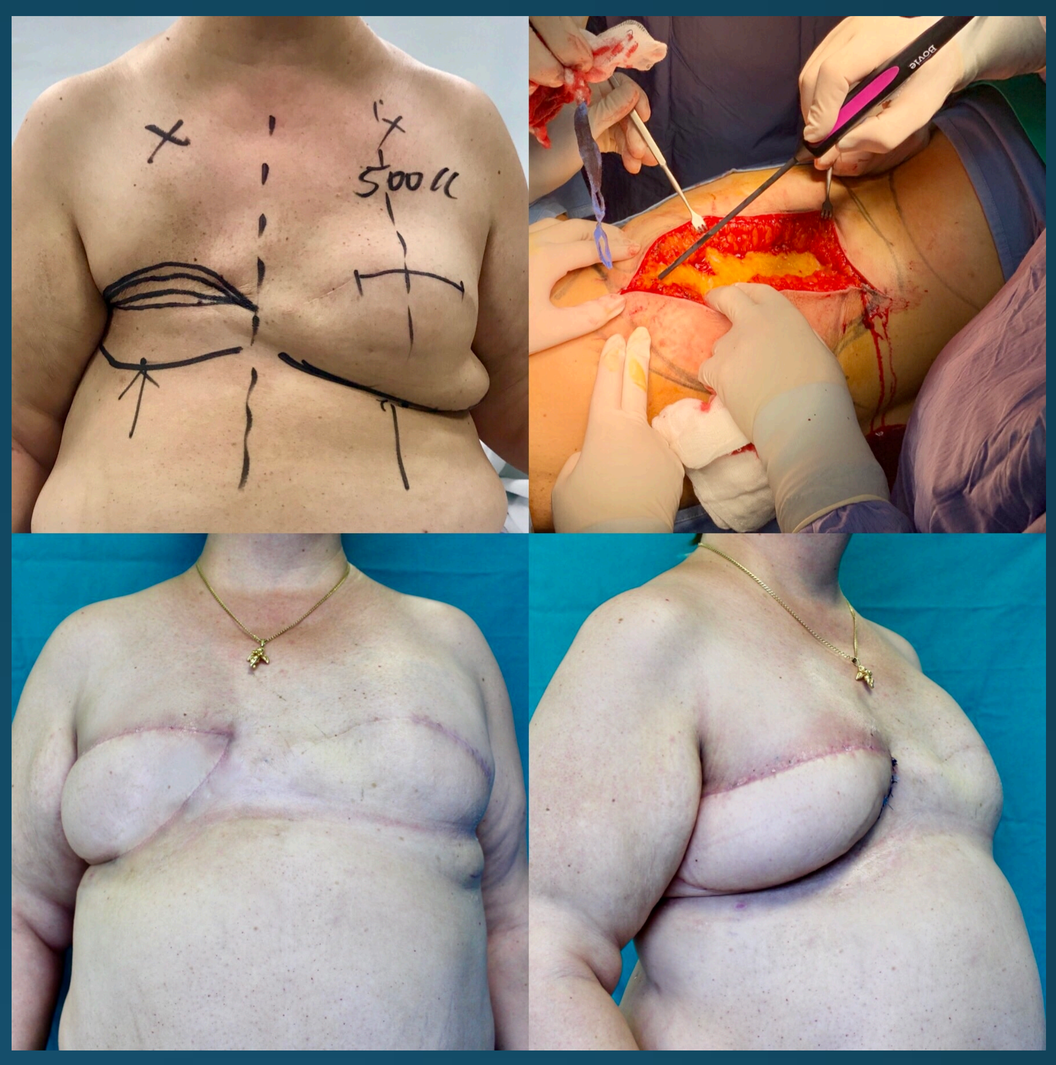
LD musculocutaneous flap became our first reconstructive option due to patient comorbidities (heavy smoker and diabetes).

Markings, flap harvest and insetting were performed accordingly to standard technique, for flap dissection we employed the J-Plasma surgical device.

According to operative charts, the time required for flap harvesting (from skin incision to the patient supine repositioning) was around 55 minutes.

Two suction drains were placed. The donor area was sutured in two layers.

The patient was discharged 2 days after the surgery. Drains on the back were removed at 6 days post-op. At the last follow-up, no early or late complications were recorded, including wound dehiscence, fluid collection and skin necrosis.



Discussion

The LD flap is considered by many to be one of the best options for patients with small-to-medium–sized breast, with contraindications for free flaps. Despite its relative simplicity combined with the very reliable and consistent vascularity, the main disadvantage reported while harvesting the whole LD muscle is the high seroma incidence occurring from 20 to 30% of donor site (3). The etiology is multifactorial, the most common treatment is aspiration that require several visits to the outpatient clinic. Prevention had focused on dead space obliteration by means of flap fixation using quilting sutures and/or dead space sealing using fibrin sealants. Recently, however, there is a renewed interest over new instruments such as the harmonic scalpel and the plasma devices. Thanks to the low temperature produced by these new devices for coagulate and cut, the damage to patients' healthy tissue is minimal and therefore the donor site morbidity is reduced. The role of the harmonic scalpel on serum formation is still controversial (4) (5).

Compared to our standard flap dissection (with monopolar\bipolar devices) the dissection time (from incision to flap in setting) of 55 minutes (while our average flap dissection is 82 minutes). Furthermore, drains were removed in sixth operative day (while our mean removal is in 10th post-operative day). The total quantity of back serum was 240 cc (versus 375cc).

According to recent literature, the employment of J-Plasma in flap dissection present several advantages over more conventional methods:

- Minimizes lateral and depth of thermal spread
- Reduces healing times
- Reduces serum production from the donor site
- Decreases complications and procedure time
- Improves patient outcomes: decreased post-op pain
- Improves visualization for surgeon from smaller smoke plumes and less char
- Effective across multiple tissue types (subcutaneous tissue, fascia, muscle)

Conclusion

Prolonged donor site drainage after LD Flap is known to significantly protract the postoperative morbidity. In our opinion, the J-Plasma surgical energy device could be considered an interesting option to reduce the back-serum formation and the operative time. More studies, including large cohorts of patients, are needed in order to evaluate outcomes and criticisms of this instrument compared with standard devices.

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