INTRODUCTION

The repair of defects in the lower limbs is still challenging, since such defects often affect elderly patients with peripheral vascular insufficiency and lack of tissue laxity, which poses greater risk of necrose. This anatomical characteristic and frequent exposure of bone and tendon hinder graft viability. Primary or second-intention closure is recommended whenever possible, but when not possible, grafts and flaps are an option. Conventional muscle flaps were thus gradually replaced by perforator flaps, with less morbidity in the donor site. Keystone flap is a relatively new technique, described for the first time by Behan in 2003, providing an interesting option with a high success rate in these reconstructions. The name refers to the curving trapezoidal keystone shape in Roman arches. It is a fasciocutaneous flap with vascularization from perforating arterioles of muscle, useful for reconstructions in areas with poorly distensible...
le skin such as the limbs and back.³

**CASE REPORT**

Female patient, 92 years, presented a hyperkeratotic nodular lesion measuring approximately 2cm in the largest diameter on the anterior aspect of the left leg, with biopsy showing in situ squamous cell carcinoma (Figure 1), without prior treatments. Patient was submitted to Mohs micrographic surgery and was tumor-free in the first stage (Figure 2). Primary closure used the keystone technique, with a curved strip the same width as the defect and with 90° angles at the corners of the tumor excision area. Advancing the flap on the primary defect results in a secondary defect that is longer and narrower. Perpendicular to the flap’s advancement, the two peripheral edges were advanced in V-Y and the strip was advanced over the defect and sutured with 4.0 nylon (Figures 3 and 4).

The patient presented good evolution, with no postoperative complications (Figure 5).

**DISCUSSION**

Keystone design perforator island flap (KDPIF) is an elliptical flap based on perforator vessels. It acts as a multi-perforator advancement flap requiring tissue laxity for the advancement.
The defect is closed directly, and the midline is the area with the greatest tension, and through the V-Y advancement of each extremity of the flap, the “island” strip fills the defect, allowing closure of the secondary defect on the opposite side. Its longitudinal orientation preserves the perforator arterioles and lymphatics, reducing the risk of distal lymphedema. The importance of blunt dissection is emphasized in raising these perforator island flaps, since it preserves the vascular integrity of the musculocutaneous and fasciocutaneous perforators, together with the venous and neural connections. Four types of this flap have been described: type I (direct closure), type II (with or without grafting), type III (double-island flap technique); and type IV (rotation and advancement with or without grafting). The keystone flap minimizes the need for skin grafting in the majority of cases and produces excellent aesthetic and functional results, with less postoperative pain and early mobilization. Therefore, this is a simple and effective method for surgical closure in situations that would otherwise require a more complex technique or skin graft.

REFERENCES

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