Weight-bearing plantar reconstruction after resection of melanoma using the medial plantar flap

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INTRODUCTION: Melanomas present less frequently in the heel than other areas of the body and are often diagnosed at a later age. The plantar heel accounts for a little over 50% of plantar foot locations, and the lesion is composed mainly of acral lentiginous melanoma. The heel fat pad poses significant challenges in reconstruction. The individuality of the plantar skin leaves the reconstructive surgeon with limited options to cover skin defects over the weight bearing areas of the foot. Historically, different surgical methods have been used, ranging from skin grafting to local flaps and free flaps. The plantar medial artery flap, however, provides a composite of tissues very similar to that of the plantar heel, with the donor site being relatively expendable. In the present study, we report our experience with the use of the medial plantar artery-based flap for coverage of tissue defects around the heel caused by wide excision of melanomas.

MATERIALS AND METHODS: An 8-year retrospective review of all acral melanoma of the weight-bearing area of the foot submitted to reconstruction after resection using the medial plantar flap was performed. Examined variables included gender, age, size of the flap, ethnic distribution and Clark and Breslow's level. Post-operative complications such as flap loss and hyperkeratosis were identified.

RESULTS: Eleven medial plantar artery flaps performed from 2006 to 2014 were included. The same surgeon at A.C Camargo Cancer Center Hospital (São Paulo, Brazil) performed all the procedures. Of the 11 patients, five were male and six were female. They ranged in age from 27 to 58 years. All the flaps were raised as fasciocutaneous pedicled flap based on the medial plantar artery. Flap size varied from 4x4 cm to 6x7 cm. The donor site was covered with a split-thickness skin graft and all patients discharged in the day after. As complications, we had partial flap loss in one case but no revision or grafting was necessary, hyperkeratosis was observed in eight cases. (Figure 1 and 2).

FIGURE LEGEND: Figure 1. Pre operative. Figure 2. Post operative.

CONCLUSION: Although various surgical reconstructive options have been reported, the instep flap represents a good option since the technique does not require special surgical training compared with free flaps, provides tissue to the plantar skin with a similar texture and has less risk of functional donor site morbidity.

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