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Short communication

Pregnancy and childbirth after an iliac crest free flap

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Abstract

We report two successful pregnancies and vaginal deliveries by patients who had previously had deep circumflex iliac artery free flaps that had been harvested for reconstruction in the head and neck.

Keywords: reconstruction; free flap; pregnancy; iliac crest free flap

Introduction

The choice of best reconstructive tissue depends on many factors such as: the location and extent of the ablation of hard and soft tissues, dental status, comorbidity, characteristics of the flap (such as length of the pedicle, bone stock, and soft tissue), and the expectations of both the patient and the surgical team for future rehabilitation.[1] The deep circumflex artery (DCIA) composite free flap (first described by Taylor et al[2]) gets its blood supply from the external iliac artery and vein by means of the DCIA. It gained popularity for oromandibular reconstructive purposes owing to its ability to close through-and-through defects with good soft-tissue bulk, as well as having adequate volume of bone for implant-supported dental rehabilitation.[3,4] Subsequently, this flap has become a viable option for the reconstruction of complex defects after maxillectomy.[5]

Selection of the DCIA flap over the fibular myosseous flap may be considered if the patient is dentate, if shorter lengths of osseous reconstruction are required, and if the defect is in the region of the mandibular angle, because its contour is better suited to this anatomy.[6,7] The DCIA flap has also been shown to have better success with dental implants than the free-fibular osseous flap.[8,9] The patient-reported favourability of the scarring at the donor site has also been found to be higher in DCIA flaps, particularly for women, in whom the appearance of the fibular scar on the lateral leg is a commonly raised concern.[7]

Potential complications of the DCIA flap have been noted to include disturbance of the gait, hernia, paraesthesia of the lateral femoral cutaneous nerve, pain, seroma, and inclusion cyst.[10] Specifically, the risk for the formation of a hernia may be reduced by meticulous closure, with or without the insertion of a polypropylene mesh. The suggested possibility of late formation of a hernia during vaginal delivery is compelling enough to deflect some surgeons from using this flap in women of child-bearing age or younger, although reports to support this are lacking.

Case reports

Case 1

A 26-year-old woman had a right segmental mandibulectomy to treat a solid ameloblastoma. Resection was from the right mandibular canine to the right sub-condyle, and it necessitated reconstruction with a vascularised bone graft. Primary reconstruction with a DCIA myosseous free flap was completed. Closure of the donor site was achieved with mesh and primary repair of muscle layers over a drain, and internal oblique muscle was used to line the mucosal defect in the oral

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cavity. Twelve months after operation, she had an uneventful, vaginal delivery of her second child at 39 weeks gestation. Finally, she had dental rehabilitation at 25 months after the reconstruction with the placement of the implants into the DCIA for support of a fixed prosthesis.

Case 2

A 20-year-old woman had a left maxillectomy for the treatment of a recurrent giant cell tumour. Primary reconstruction was completed with a left DCIA free flap that used internal oblique muscle to replace the oral mucosal defect. Eight months later she had four dental implants placed into the DCIA flap. Thirty months after her initial reconstruction she delivered her first child vaginally, at full-term, with no complications.

Discussion

To the best of our knowledge, this is the first report of successful pregnancies and childbirth after iliac crest free flaps, which shows that they are not contraindicated in women of child bearing age or before. The ability to offer a DCIA free flap to young women adds to the list of options for reconstruction. In both patients, the primary repair of the internal oblique muscle was reinforced with polypropylene mesh after harvest. The addition of mesh to the muscular repair reduced the risk of the formation of postoperative hernia. The large amount of pelvic and abdominal force required for vaginal birth did not cause incisional hernias to form in either. It should also be noted that in both cases, bicortical iliac crest was harvested to provide an adequate volume of bone for the placement of implants. This was in place of a single-cortex crest harvest, which could have limited the placement of future implants.

Both our patients were of relatively young maternal age and were therefore at lower baseline risk of birth-related pelvic injuries.

In summary, the DCIA free flap is a viable reconstructive option in women of child-bearing age and, in our two patients, was not associated with complications during vaginal delivery. Further cases of vaginal birth after the harvest of DCIA free flaps should be documented to reinforce or refute these case findings.

Conflict of interest

We have no conflicts of interest.

Ethics statement/confirmation of patients' permission

Ethics approval was not required. The patients gave permission for publication.

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