



Letter to the editor

Salvaging skin loss of free fibular osteo-cutaneous flaps in oral oncological reconstruction

Although osteocutaneous fibular flaps are generally known for its overall reliability, very rarely its skin paddle perforators could either be absent or anomalous in its connection to the main axial vasculature of the lower leg i.e. the peroneal Artery and the Vein(s). We wish to share with the readers three instances where a potential skin island failure was avoided by careful intraoperative decision making among a consecutive series of 21 successful free fibular flap reconstruction of mandibular defects, 11 of which were central.

In the First case, where a reconstruction of a segmental defect of the mandible with the overlying tumour laden alveolar mucosa in a T4 N0 M0 squamous cell carcinoma of the lower alveolus in a 60-year-old man was done with a osteocutaneous free fibular flap, while harvesting the flap, we found that the skin perforators marked out preoperatively by ultrasonography were not in continuity with the peroneal artery but with the posterior tibial artery instead. A decision was made intraoperatively to anastomose the largest perforator separately to the donor vessels available in the neck. Ipsilateral submental vessels (artery and vein) were chosen for this purpose and the continuing facial vessels were used to anastomose the peroneal artery and vein.

In the Second case where the body and ramus of the mandible with its condyles and adjacent mucosal and soft tissue defects were being reconstructed for a soft tissue sarcoma with bone invasion in a 15-year-old girl, the distal flow through of the peroneal vessels were used to supercharge the skin island by connecting it with the identified sole skin perforator which was found to be linking with the posterior tibial Artery (Fig. 1).

In the Third case a significant perforator was found to be absent during the flap harvest in a 40 year old male, forcing us to abandon it

and proceed to the opposite leg from where the flap was harvested successfully.

We did a thorough search of the English literature to explore the occurrences of these anomalies in the skin paddle perforator of osteo-cutaneous free fibular flaps and found that, whereas the 1st and the 3rd options were used to salvage anomalous communication of the skin with the axial blood flow in the leg previously, the third option has not been described so far [1–4].

Therefore we recommend additional anastomosis of the perforators either to the donor vessels in the neck or to the distal peroneal flow (recipient vessels with in the flap) as a standard practice whenever there is an anomalous connection of the skin perforators with the deep vessels to ensure survival of the skin paddle of the composite flap and obviate the need for the second harvest from the opposite leg or any other site.

However in-spite of all these measures, we did have a late skin loss in a 43 year old woman for whom the central segment of the mandible with tumour (squamous cell carcinoma) involving the alveolus had to be removed with adequate margins and in this case a inferiorly based nasolabial flap was tunnelled to the skin defect inside the mouth after de-epithelializing its base with in the tunnel, instead of a second free-flap [5]. In another case where a single reconstruction plate was used to reconstruct a lateral mandibular defect after hemi mandibulectomy for an osteosarcoma in a 54 year old male patient, the plate got exposed after the patient developed distant metastasis during the terminal stages of his illness. Ever since then, we have been using miniplates instead of a single titanium reconstruction plate for bone moulding with no incidence of late infection or fistula formation necessitating planned removal or spontaneous extrusion [6].

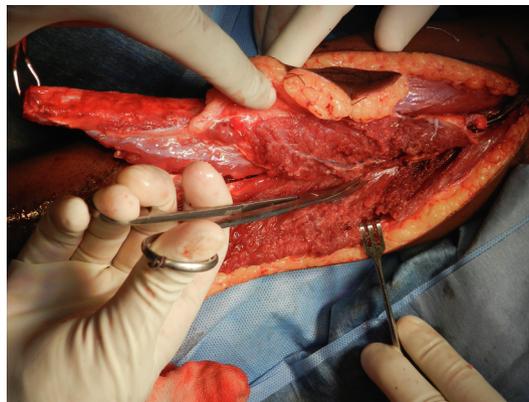


Fig. 1. Dissection of the sole anomalous perforator.

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Declaration of Competing Interest

The authors declared that there is no conflict of interest.

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