



# Venous flow-through flap as an external monitor for buried radial forearm free flap in head and neck reconstruction

Raul Pellini\*, Barbara Pichi, Marzia Ruggieri, Paolo Ruscito, Giuseppe Spriano

*Department of Otolaryngology, Head and Neck Surgery, National Cancer Institute "Regina Elena", via Elio Chianesi 53, 00128 Rome, Italy*

Received 13 November 2005; accepted 20 January 2006

## KEYWORDS

Free flap;  
Buried flap;  
Microvascular surgery;  
Head and neck surgery;  
Head and neck reconstruction

**Summary** Postoperative monitoring of buried free flaps in head and neck reconstruction can be extremely difficult or impossible.

The authors describe a series of 11 cases over a 21-month period, of buried radial forearm free flaps used in head and neck reconstruction. To monitor the main buried flap a small venous flow-through flap is supplied by and attached to the cephalic vein of a radial forearm free flap. This small venous skin flap is inset separately from the main paddle, so that it is visible at the external surface of the neck, furnishing information about the perfusion of the entire flap.

© 2006 The British Association of Plastic Surgeons. Published by Elsevier Ltd. All rights reserved.

Microvascular free tissue transfer is a good method for reconstructing even large defects after oncological surgery for head and neck cancer. Continuous postoperative monitoring of the perfusion of a free flap is important in achieving a favourable outcome. After microvascular thrombosis the best chance for flap salvage is the earliest possible revision of the microanastomosis.<sup>1</sup> An ideal

monitoring technique has to be objective, continuous, noninvasive, safe, easily managed and interpreted by medical and nursing staff, inexpensive and a clear indicator of flap alteration in artero-venous circulation. The clinical assessment of tissue colour, turgor, capillary refill and bleeding is the most reliable method of monitoring the exposed flap, but it is not suitable for a buried flap. The use of buried flaps in head and neck reconstruction makes monitoring particularly difficult.

We present an original technique for harvesting a radial forearm free flap with a secondary skin

\* Corresponding author. Tel.: +39 06 52665065; fax: +39 06 52662015.

E-mail address: [pelliniraul@yahoo.it](mailto:pelliniraul@yahoo.it) (R. Pellini).

paddle monitor supplied by and placed on the cephalic vein and sutured externally between the cervical flap suture lines, so that it is visible at the external surface of the neck.

## Material and methods

During the period January 2004 to September 2005, 11 consecutive patients were operated on in our Department for head and neck cancer, and the defect was reconstructed with a buried radial forearm free flap with a monitor skin paddle. The patients were males, with a mean age of 56 years (range, 51–61). Nine patients underwent total laryngectomy with circumferential pharyngectomy for hypopharyngeal cancer (the circumferential pharyngeal defects varied from 9 to 12 cm in length) and immediate reconstruction with a tunnel-shaped radial forearm free flap sutured to prevertebral fascia that became the posterior wall of the neohypopharynx.

One patient had a recurrence after radiotherapy of cancer of the posterior wall of the hypopharynx and underwent posterior wall ablation with larynx preservation. The defect was reconstructed with a radial forearm free flap placed posteriorly to the larynx and sutured to residual mucosa of the lateral wall of both pyriform sinuses.

One patient had partial glossectomy with partial lateral pharyngectomy through a mandibular swing approach for cancer of the base of the tongue. The defect was reconstructed with a radial forearm free flap. The preoperative non-neoplastic reduced opening of the mouth limited the direct vision of the flap.

In all cases, Allen's test was preoperatively assessed to ensure an intact radial and ulnar artery. The course of the radial artery was marked using a Doppler ultrasound, and the cephalic vein was also marked. The flap was designed in all cases to monitor the viability status with a small adjunctive skin paddle far from the flap. The monitor island was designed just above the course of the cephalic vein inside the forearm skin incision (Fig. 1), not contiguous to the primary flap. The cephalic vein is superficial and adherent to subcutaneous tissue, allowing harvesting of the monitor island and the flap together, with no further pedicle dissection (Figs. 2 and 3). The small skin monitor was vascularised with recirculated venous blood. The donor site of the flap was covered with a skin graft from the left thigh. The small defects created by the monitor paddle were closed directly.

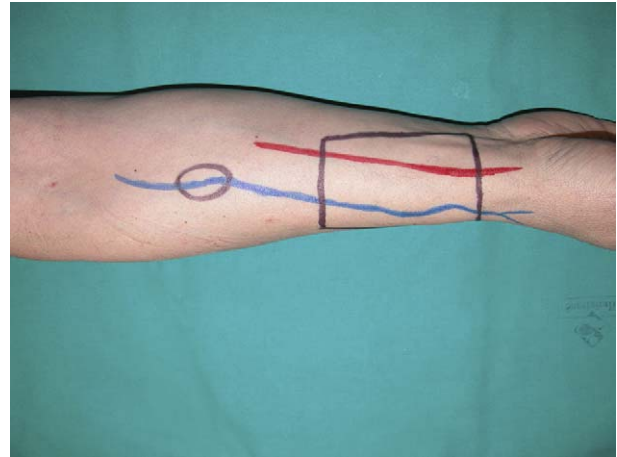


Figure 1 Preoperative planning of flap and monitor.

In the nine cases of total pharyngolaryngectomy, the flap was harvested in a trapezoidal shape (9–12 cm in width and 8 cm in length). The posterior wall of the oropharyngeal and oesophageal stump was directly sutured to prevertebral fascia, which formed the definitive posterior wall of the new hypopharynx. The free flap was sutured antero-superiorly to the oropharyngeal stump, laterally with prevertebral fascia, and antero-inferiorly with the oesophageal stump with a two-layer closure of 3/0 absorbable suture. A salivary stent containing the feeding tube was positioned during the surgery, and the feeding tube was removed on day 10. The patient was fed through the stent, which was removed through the mouth on day 21.

In the case of posterior hypopharyngeal wall resection with larynx preservation, the flap was placed to create a new posterior wall. Laterally it was sutured to residual mucosa of the pyriform sinuses. Inferiorly and superiorly the flap was sutured to the posterior wall of the pharyngeal

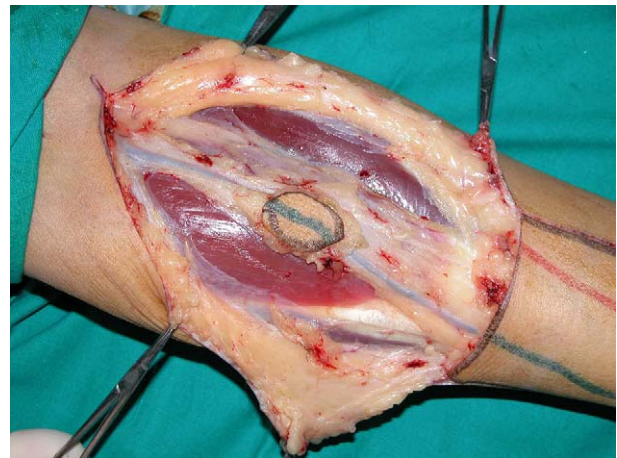


Figure 2 Monitor island related to the cephalic vein.

Download English Version:

<https://daneshyari.com/en/article/4121565>

Download Persian Version:

<https://daneshyari.com/article/4121565>

[Daneshyari.com](https://daneshyari.com)