
Radial Forearm Free Flap in the Reconstruction of Retromolar Trigone Defect for Oral Squamous Cell Carcinoma. - A Case Report:

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A 65-yr-old male patient, moderately built and nourished, reported to the department of Craniomaxillofacial, Plastic and Reconstructive surgery with a chief complaint of growth in the right lower jaw of 2 months duration. At presentation, the growth measured 5x6 cms and exhibited all features of a malignant lesion. Patient had a history of chewing betel nut with tobacco 7-8 times a day for the last 40yrs.

Clinical examination revealed a solitary well-defined oval ulcero-proliferative growth measuring 5x6 cms, located in the right retromolar trigone, extending from the mandibular first molar to the adjoining buccal vestibular fornix with an erythematous surface which bled to touch. On palpation, the growth was non-tender, non-pulsatile and firm in consistency. The incision biopsy report revealed it to be a moderately-differentiated oral SCC.

Routine investigations included a hemogram, chest x-ray & ECG which was within normal limits. The Allen's test performed revealed good collateral circulation of the palmar arch. A colour doppler flowmetry of the left forearm confirmed patency of the deep and superficial arterio-venous systems. A USG neck revealed enlarged right submandibular and upper jugulo-digastric lymph nodes.

Under endotracheal intubation & hypotensive anaesthesia, a marginal mandibulectomy including the molars and coronoid sparing the inferior border of the mandible with a supra-omohyoid neck dissection was carried out. Under a tourniquet with 200mm Hg pressure a fascio-cutaneous radial forearm flap pedicled on the radial artery and its venae comitantes including the cephalic vein was, harvested. Following haemostasis the tourniquet was released and the vascularity to the palm was ascertained. The donor site was skin grafted and an occlusive dressing applied. The flap was taken to the recipient site and both the arterial and venous ends were prepared by completing the adventectomy. The radial artery was anastomosed (end to end) with the right facial artery and the cephalic vein with the right internal jugular vein (end to side) under continuous heparin irrigation using a Carl-Zeiss Microscope (OPMI Vario Triploscope). Following the anastomosis the vascularity of the flap was ascertained by the bleeding margins and then the flap was inset into the oral defect to reline the retromolar trigone area. The rest of the neck and oral wounds were closed in layers following insertion of vacuum drains. Close monitoring of the flap was done over the next 48 hours for assessment of flap vitality. The overall recovery was uneventful and the flap uptake was excellent.

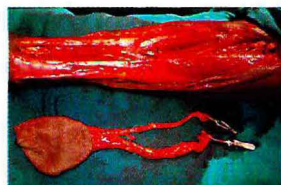
Discussion:

The radial forearm free flap known as the Chinese flap was developed in 1978 as a fascio-cutaneous flap in China. It was first reported in the literature in 1981 by Yang et al who used the flap to provide soft pliable tissue to resurface the neck following release of post-burn contractures. Soutar et al from Scotland popularized the technique for intraoral reconstruction in 1983. The diameter of the radial vessel (2-to 3-mm) and a lengthy vascular pedicle makes it much more a favored flap. In addition the RF flap has excellent venous drainage from the superficial cephalic vein (3-4mm) and the deep venae comitantes (1- 2mm) where an additional anastomoses may facilitate further drainage.

Since a large area of skin of the forearm can be harvested its role in the restoration of oral mucosal defects after abalative oncologic surgery remains unequivocal. It has been used in all areas of the oral cavity, particularly for defects of the anterolateral tongue, floor of mouth, tonsillar, pharyngeal and the hard and soft palate. In addition it has also been used in the reconstruction of the hypopharynx, cervical esophagus and the skull base. Because of its ability to transfer reliable, well-vascularised mouldable skin, along with the potential to incorporate bone, tendon and nerves, this is a flap of choice for head and neck reconstruction. In conclusion, the unique attributes of the radial forearm flap makes it a flap of primary choice for reconstruction in the head and neck region.



Pre Operative



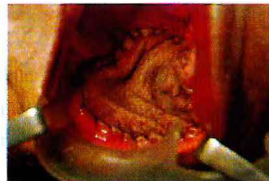
Flap harvesting



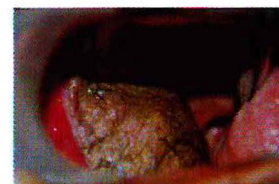
Donor site



I/O pre operative



Flap sutured in



Recipient site 1 month
Post operative



Donor site 1 month
Post operative



Post operative