

# Indications for, and limitations of, the retroangular flap in facial reconstruction according to its vascular mapping

T. Fabrizio\*

Unit of Plastic Surgery, IRCCS, Referral Cancer Center of Basilicata, Rionero in Vulture (Pz), Italy

Accepted 12 March 2015

Available online 10 April 2015

## Abstract

We have used the retroangular flap for the reconstruction of facial defects after excision of tumours. Important variables such as vascular mapping, type of anaesthesia, duration of stay in hospital, and the diagnosis and treatment of complications were taken into account in assessing its effectiveness.

We studied 187 patients, 103 men and 84 women, who were treated with the retroangular flap, and the morphological and cosmetic results analysed. There are many vascular variations of the flap. The patients were followed up for a median of 12 (range 12–125) years and their reconstructions were successful. The technique can be considered as one of first methods of choice for the reconstruction of cutaneous defects of the middle third of the face.

© 2015 Published by Elsevier Ltd. on behalf of The British Association of Oral and Maxillofacial Surgeons.

**Keywords:** Facial reconstruction; Critical analysis; Arterialized pedicled flaps; Vascular variations; Morphological and cosmetic results

## Introduction

There are many well-established methods for the reconstruction of cutaneous defects of the middle third of the face, which range from simple flaps with random blood supply to complex, differently-shaped, microsurgical flaps that are raised from often distant donor areas.

Between these two extremes the retroangular flap is gaining its rightful place in the reconstruction of cutaneous defects that are restricted to the middle third of the face. It is an arterialised cutaneous flap based on a retrograde blood supply from the facial artery, its main advantages being its autonomous vascularisation and its colour and texture, which are practically identical to the skin of the resected

area. As its usefulness is now not questioned, it is important to investigate the flap fully as there could be complications as a result of its vascular variations.<sup>1</sup>

The purpose of this study was to make a critical analysis of the advantages and disadvantages of the reconstruction of cutaneous and subcutaneous defects of the middle third of the face with the retroangular flap compared with other flaps and according to its vascular patterns.

## Patients and methods

We studied 187 patients whose faces were reconstructed with a retroangular flap. Many authors have used it and, 18 years after its introduction it is accepted as one of the most common procedures in nasofacial reconstruction.<sup>2,3</sup>

All patients had angiograms preoperatively. The technique to raise the flap is simple, and was well-illustrated by the first cases reported from this unit in 1996.<sup>4</sup> The skin island that corresponds to the defect is drawn close to the nasolabial

\* Correspondence to: Chief, Unit of Plastic Surgery, IRCCS, Referral Cancer Center of Basilicata, Via Padre Pio, 1, 85028, Rionero in Vulture, Italy. Tel.: +39 0972 726735; fax: +39 0972 726507.

E-mail address: [tommaso.fabrizio@crob.it](mailto:tommaso.fabrizio@crob.it)

fold, and an incision is made at its lower margin to identify the facial vessels that lie directly beneath the skin at this level, because in men the inferior border of the flap must be situated between the smooth skin and the bearded skin.

After the lower border of the flap has been completely incised, the vessels are momentarily clamped just distal to the origin of the superior labial artery, to see if there are any alterations in the retrograde blood supply and to identify and incise the other borders of the flap. After the vessels at the distal level have been cut, the cutaneous incision is extended to the lateral and upper borders of the skin island. During dissection of the flap, some fibres of the levator muscle of the upper lip might be involved, particularly in slim patients, but it does not imply that any modification in the mobilisation of the commissure of the lip is necessary. The terminal branches of the facial nerve are always avoided and never involved in the raising of the flap, because they penetrate the muscles of facial expression deeply, far from the donor area of the flap. Finally the vascular pedicle is dissected as far as the medial canthus. The donor area is closed directly, and the suture is hidden in the nasolabial fold. The flap is sutured to the recipient side with single absorbable 4/0 sutures.

To avoid rupture of the delicate perforating branches that run through the skin island, it might be useful to compact the flap with three or four rapidly absorbable sutures between the fascia, dermis,<sup>4</sup> and pedicle. When the communications between the two angular arteries are definitely present they need to be quite long to reach the opposite side of the nose and the forehead (Fig. 1). Our wide experience in raising these flaps over the years has made us realise that some technical differences must be taken into account.

When the defect to be covered is close to the donor area it is not necessary to cut the pedicle of the vessel that corresponds to the inferior border of the skin island. It is sufficient to detect the perforator vessels of the facial artery with an ultrasound miniscanner and raise the flap according to the “free style” method. If the recipient zone is quite large, it is possible to raise the flap relatively far from the area of the vessel, and cut just inferiorly to its pedicle, but preserve the perforators that come from the artery.

The data for the study were collected into our database and the study protocol was approved by the hospital ethics committee.

## Results

Table 1 shows the details of the patients, their flaps, and their clinical course. To assess the effectiveness of this flap compared with more simple ones such as the local ones with random vascularisation, or more complex microsurgical ones, we recorded type of anaesthesia and vascular variations. We also compared the morphological and cosmetic results obtained in the recipient and the donor areas. In particular we examined the recipient area to assess the degree

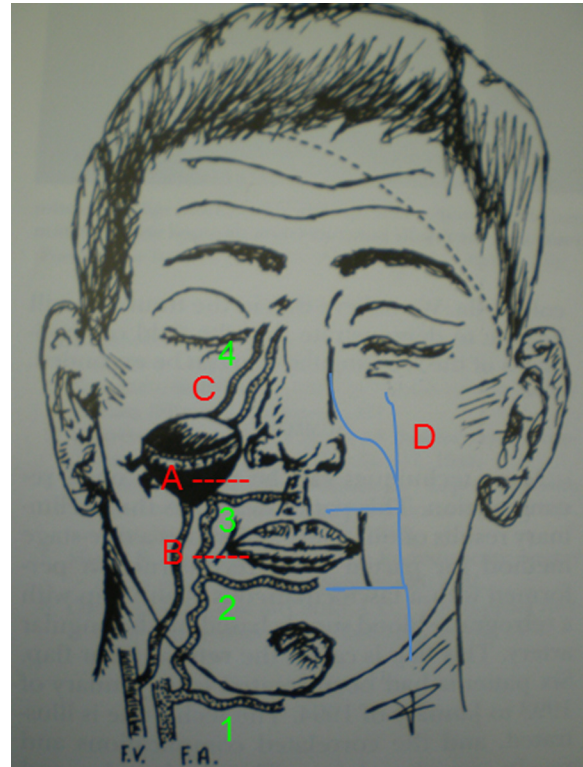


Fig. 1. The diagram shows the division of the flap's proximal supply and its possible movements with the arc of rotation and the classification of the facial artery, according to Furukawa types.<sup>1</sup> A = short course that terminates proximal to the superior labial artery (Type 1). B = terminates distal to the superior labial artery near the nasolabial fold (Type 2). C = the classic course in which it extends to the lateral nasal or angular branch (Type 3). D = duplex, with a dominant lateral angular branch (Type 4). 1 = submental artery, 2 = inferior labial artery, 3 = superior labial artery, and 4 = terminal segment of the angular artery.

Table 1

Details of patients ( $n = 187$ ). Data are number (%) except where otherwise stated.

| Variable                         |             |
|----------------------------------|-------------|
| Sex:                             |             |
| Male                             | 103 (55)    |
| Female                           | 84 (45)     |
| Histological type:               |             |
| Squamous cell carcinoma          | 105 (56)    |
| Basal cell carcinoma             | 81 (43)     |
| Rhabdomyosarcoma                 | 1 (<1)      |
| Median (range) follow up (years) | 12 (12–125) |
| Area reconstructed:              |             |
| Nose                             | 76 (41)     |
| Face                             | 64 (34)     |
| Orbital region                   | 27 (14)     |
| Lips                             | 20 (11)     |
| Local anaesthetic                | 67 (36)     |
| Day surgery                      | 73 (39)     |
| Maximum size of flap (cm)        | 8.3 × 7.3   |
| Immediate complications:         |             |
| Necrosis of 5% of skin           | 7 (4)       |
| Ectropion                        | 1 (<1)      |
| Delayed complications:           |             |
| Bad colour of flap               | 4 (2)       |
| Excessively thick flap           | 2 (1)       |

Download English Version:

<https://daneshyari.com/en/article/3123109>

Download Persian Version:

<https://daneshyari.com/article/3123109>

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