

LIP SWITCH FLAP (ABBE FLAP)

Originally described by Stein in 1848⁽³⁰⁾, the lip switch flap was later popularized by Abbe⁽¹⁾ who gave the name to the switch flap. Though many flaps have been described which can repair an upper lip or a commissure, this is the most reliable, practical, and versatile flap. Estlander described a similar flap including the oral commissure in 1872⁽¹³⁾. That is why when the Abbe flap includes the commissure, it is also known as the Abbe-Estlander flap. Up to half the inferior lip can be harvested to repair the upper lip, though ideally the flap should be about one third the size of the inferior lip.

Although it cannot be considered to be an Abbe flap, the inferior labial artery is also the supply vessel for other types of flaps. As long as the labial artery is preserved, mucosal or vermillion flaps can also be harvested from the inferior lip, unilaterally or bilaterally based (inferior labial artery bi-pedicled vermillion flap).

This flap is a cross flap and will invariably need a second stage to divide the pedicle and remodel the donor area if needed (usually 3 weeks later).

Indications

This flap is mainly indicated to repair defects affecting the upper lip or buccal commissures. Partial or minor forms of Abbe flap can be considered to repair vermillion

defects that are secondary to poor cleft lip repair, where only part of the prolabium or partial vermillion loss results.

Vascularization

This flap is based on the inferior labial artery that emerges at the edge of the commissure, as a collateral branch from the facial artery (see inferior labial artery). It courses medially from one side to anastomose with its counterpart on the upper-inner aspect of the vermillion (see Fig. 4.32) supplying the inferior lip.

Markings

The precise boundaries of the defect on the upper lip have to be established. If possible, these limits should be accommodated to the standard aesthetic units and subunits of the upper lip, cheek and nose; in order to place the scars at the boundaries of these units. Once the precise limits of the defect are established, a pattern is taken and transposed to the lower lip to obtain a flap that, once rotated, fits perfectly into the defect. It is also very important that the donor area can be repaired avoiding secondary deformation of the remaining lip and the mental area.

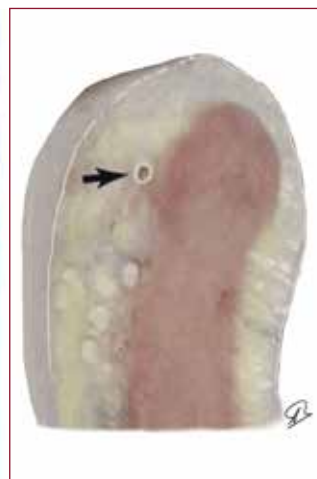


Figure 4.48. A) Generally, a pattern from the defect should be obtained to outline the shape and size of the flap on the lower lip. The forked design shown here is the one that will facilitate the closure of the donor area with the best-placed scars. B) Position of the inferior labial artery behind the orbicularis oris muscle.

Whatever the shape of the flap that is outlined, a “vermillion bridge”, including the artery has to be preserved.

The Abbe flap can be harvested laterally based (Fig 4.33) or medially based (Fig. 4.37) depending whether the pedicle will be left on the lateral aspect of the flap or the medial aspect.

Depending on the position of the flap and its pedicle, the mouth will remain nearly closed during the next three weeks or can remain practically unrestricted. Flaps based on a medial pedicle that are harvested from the side of the lower lip, will allow the patient to open the mouth to almost 100% (see 4.37b).

Elevation

Elevation of this flap is not complicated but some surgical details are important, to ensure a safe elevation-rotation.

Insetting the flap

The pivot point has to be secured with two or three skin sutures to avoid accidental stretching or avulsion of the pedicle. The donor area is sutured in separate layers: mucosa first, the muscle after, and finally the skin. The same order is followed in the recipient area with the flap. Other defects can then be repaired with local flaps or skin grafts.



Figure 4.49. A) The incision starts at full thickness, on the distal aspect of the vermilion. By doing so, the position of the inferior labial artery is revealed. The artery is divided and ligated. B) The lip is incised deep through the orbicularis muscle, including the mucosa.



Figure 4.50. A) The mucosa from the vestibular side is also incised according to the size and shape of the defect. B) If no special shape is needed, a V-shape incision will ensure proper repair to the donor area. Vestibular incision on the pedicle side should stop 5-10 mms inferior to the vermilion and should never be made deep, in order to avoid injuries to the main vessel.

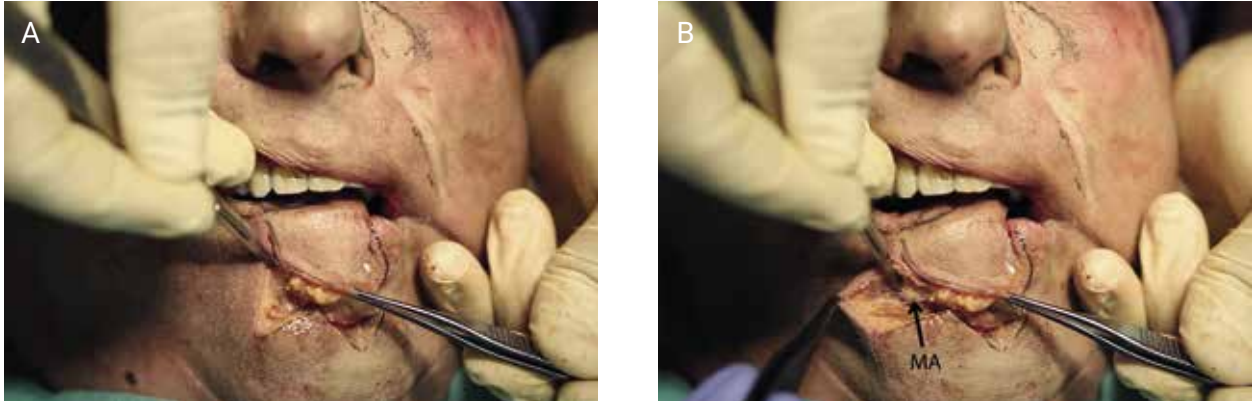


Figure 4.51. A) On the proximal aspect, incision is also performed at full thickness, including skin and muscle over the chin and vestibular mucosal. Once close to the vermillion it should stop. B) Mental branch of the inferior alveolar artery can usually be seen at the middle aspect of the flap. As they are not part of the pedicle they can be divided.

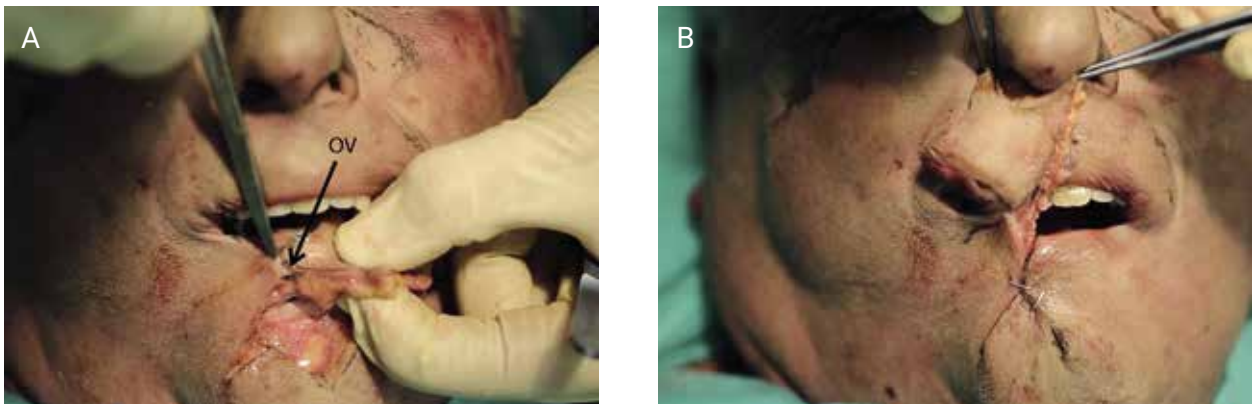


Figure 4.52. A) Occasionally the flap fits and rotates better if few mm of mucosa over the vermillion are incised. It has to be done very carefully to avoid injury to superficial anterior branches supplying the flap. B) Upward rotation is easily obtained while primary closure of the donor area is performed, with none or minimal post-operative deformities.

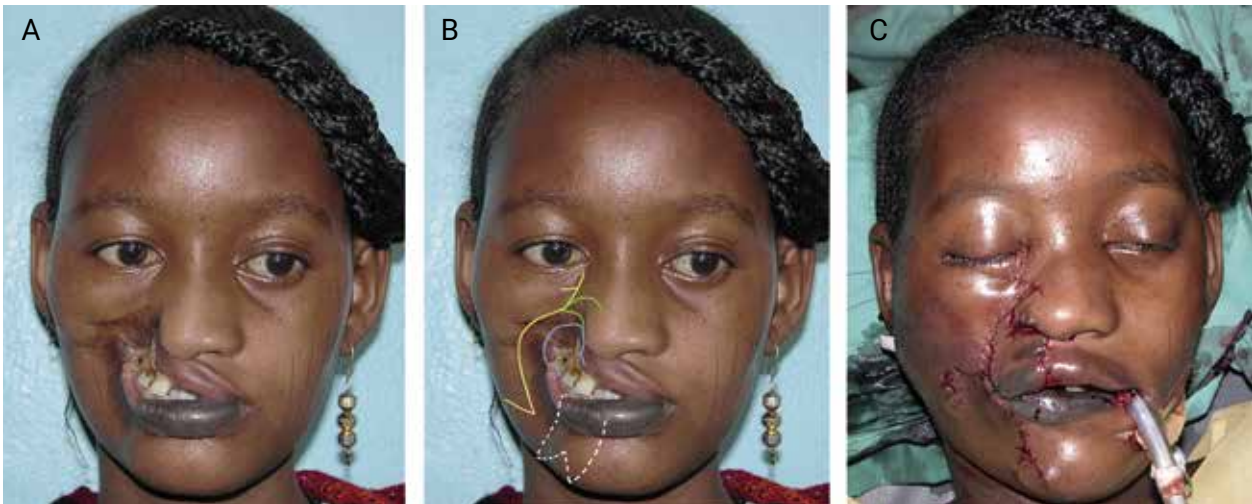


Figure 4.53. A) Macrostoma due to a mild form of noma. B) Transposition of several flaps to get something close to "one stage reconstruction". Shown in white, a medially based Abbe flap, used to repair the upper lip and nasolabial fold. Shown in green, a nasal ala flap to create the right nasal ala. Shown in blue, a folded flap to repair the vestibular mucosa. Shown in yellow, a cheek advancement flap to repair the donor area of the nasal ala flap, and cheek lateral to the new nasolabial fold. C) Final result.