

Bilateral neurovascular cheek flaps for one stage lower lip reconstruction

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Summary—Bilateral neurovascular cheek flaps, using a modification of McHugh's unilateral cheek flap, have been used to reconstruct large lower lip defects as one stage procedures in 31 patients. The simple surgical techniques are described. The results are quite satisfactory, both functionally and cosmetically.

According to the Thai National Cancer Institute cancer statistics (1980) and the tumour registry of Srinagarind Hospital, Khon Kaen University (1984), cancer of the lip ranks second among cancers of the head and neck excluding pharyngeal cancer. In 1984 there were 55 cases of cancer of the lip at Srinagarind Hospital and Khon Kaen Provincial Hospital.

The treatment of cancer of the lip varies between radiotherapy, surgical resection, chemotherapy, cryosurgery or combined modalities. The problems increase when the lesions are locally advanced.

In Thailand, radiation therapy is available only in the medical school. According to Bakers and Krause (1981) the results of this modality of treatment alone in advanced lesions are not good. Surgical treatment may be inadequate unless the surgeon is competent in reconstruction of the lip.

Simple wedge excision for the small lesion involving resection of less than one-third of the lip is an acceptable procedure but if the lesion involves resection of more than one-third of the lip, the mouth will become too small with this type of operation. The Abbe and Estlander procedures or the modification described by Lore (1962) are quite popular for this size of lesion but the mouth will be narrowed, perhaps unacceptably if the lesion is more than two-thirds of the lip.

Since simple surgical treatment of the lips can be performed in the small community hospital, we have tried to search for a simple and effective reconstructive procedure for the larger lesions which can also be carried out in this type of hospital.

Of the many methods of reconstruction that have been reported we felt that the technique described by McHugh in 1977 was closest to our

needs. He proposed a unilateral triangular neurovascular island flap of the cheek, which is mobilised anteriorly without dividing neurovascular structures and the donor area closed V to Y. He claimed good results in lower lip reconstruction.

We decided to use this form of reconstruction and have done so since 1979. We have modified the procedure to perform *bilateral* cheek flaps to reconstruct defects of more than two-thirds of the lower lip.

Method

After the standard preparation of the skin of the lower face of the anaesthetised patient, the resection is outlined with a clearance of at least one-half to one centimetre from the edge of the tumour. The triangular skin flaps are designed on each side of the cheek with their apices just in front of the ear (Fig. 1A). After the tumour is resected, the skin is incised along the designed triangular pattern, but deeper structures are not incised. The buccal mucosal incision is made similar to the skin incision but with the upper edge at a higher level to leave enough mucosa to reconstruct the vermillion. Blunt dissection is then performed using a mosquito clamp to loosen this triangular flap from the cheek tissues while leaving the neurovascular structures intact (Fig. 1B). Sufficient dissection is performed from inside and outside to enable the flaps to reach each other without tension. The edges of the donor defects are then approximated in a V-Y fashion, starting from the apex of each triangular defect. Synthetic absorbable suture materials are used intraorally and in the muscular layer; silk or cotton for the skin (Fig. 1C). The flaps from both sides are sutured together to make the new lip. The



Fig. 1

Figure 1—(A) Operative marking: the striped area for excision and the triangular areas for the flaps. (B) The triangular flap after dissection from the cheek to leave neurovascular structures intact. (C) The triangular flaps sutured in place to replace the lip. (D) The new vermilion covering the flap is derived from advancement of buccal mucosa.



Fig. 2

Figure 2—Post-operative appearance after bilateral cheek flap repair.

buccal mucosa of the flap is undermined and advanced to reconstruct the vermilion (Fig. 1D).

When performing these V-Y cheek flaps, we try to preserve the commissures of the mouth if possible. The procedure lasts from 1½ to 2 hours. If there is palpable lymphadenopathy, neck dissection is performed.

Results

We have performed these neurovascular V-Y cheek flaps in 31 patients who had large lower lip lesions. All but one proved to be squamous cell carcinoma; haemangioma was the only benign lower lip lesion in this series. The ages ranged from 30 to 109 years. There have been no serious post-operative complications other than minor wound infection. All patients are able to use their new lips quite well and have acceptable appearance (Fig. 2).

Two patients who did not have neck dissection performed and were lost to follow-up have returned a year later with fixed nodes.

Discussion

Cancer of the lip is not uncommon in Thailand, especially in the north-eastern region where people are poor and betel nut chewing is popular. Small cancers of the lip are readily treated surgically at the community hospital. For larger lesions our modifications of McHugh's technique can be used successfully. Post-operatively the patients are able to open their mouths wide enough, close the lips tightly and perform all other lip functions satisfactorily. Facial artery ligation in association with neck dissection has not caused disturbance of blood supply to the flaps, which bears out the experiences of Lentrodt and Luhr (1971). We would encourage the community surgeon to use this simple technique to treat large defects of the lip. The procedure is not as complicated as some others

and any general surgeon who is capable of performing wedge excision of the lips should be able to perform this method. Local follow-up of the patients by their own surgeon should then be better and detection of recurrence or metastasis should be in time to allow further remedy.

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