

Kummoona Lateral Cervical Flap for Reconstruction of Oral Defects after Cancer Surgery (LCF)

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Short Communication

A number of soft tissue flaps have been used to reconstruct the orofacial region after ablative surgery and the aim is to repair a defect created by resection of tumor or defect of posttraumatic missile war injuries of the face to restore function and to provide an acceptable aesthetic feature of the orofacial region.

Pedicle flap remain an important tool in perioral and orofacial reconstruction after radical cancer surgery and posttraumatic missile war injuries, despite the progress in free flap surgeries for reconstruction of head and neck after radical cancer surgery.

The use of various muscular fascial cutaneous flaps in reconstructive surgery have allowed considerable refinement of primary and secondary reconstruction of various of peri oral and oral facial structures after radical cancer surgery and posttraumatic missile injuries.

In cancer surgery there are two regional flaps widely used for reconstruction of the orofacial region. The first flap is forehead temporal flap of McGregor 1960 and the second flap is the Kummoona lateral cervical flap advocated 1994 [1-5]. Both flaps widely used for reconstruction of the defect of the tongue, floor of the mouth, alveolus and the cheek, Kummoona flap also used for reconstruction of upper neck region after radical cancer surgery and posttraumatic missile injuries.

Kummoona flap consists of skin, platysma muscle and fascia. This flap considered as the most reliable flap for reconstruction of orofacial defect and also been used for reconstruction of the lip and sub mental region in series of cases to bring the soft tissue upward for reconstruction of the lower lip and submental region by fan rotation flap in cases with post traumatic missile injuries of the face, the flap characterized by its rich blood supply and the thickness of the flap is suitable and convenient for moderate defect of the oral cavity. The platysma muscle is thin and the skin also thin, it's well tolerated by the functional activity of the tongue and mouth during masticatory process, speech and swallowing, the arc of rotation of the flap is more than 90o making the flap easily rotated for reconstruction of the oral cavity.

Anatomy of the flap

LCF consist of platysma muscle, superficial fascia and skin. The skin of the face is connected to facial bone by loose connective tissue; most of muscles of facial expression are attached to overlying skin and allowed to wide variety of facial posture and expression. Platysma represent the lower part of facial expression and supplied by facial nerve(VII Cranial nerve).the muscle originate from inferior border of lower jaw, skin and subcutaneous tissue of lower part of the face and insert in the fascia covering the superior part of pectorals major and deltoid muscles, the posterior upper muscle fiber communicate with muscle of the lip and angle of mouth. Superficial fascia are thin layer encloses platysma muscle; it is not a separate layer but a zone of loose connective tissue between the dermis and deep fascia (Figure 1).

The blood supply of the flap is very rich, inferior labial artery supply upper part of platysma and terminal branches to the cheek, the skin supplied by superficial branch of occipital artery, and platysma from submental branch of facial artery and terminal branches of external carotid, venous drainage through external jugular vein and anterior jugular vein. Elevation of flap has little effect.

Flap design

Design of the flap; by two vertical parallel incisions are made one just below the mastoid region and the other begin below the lower border of the mandible,1cm anterior to masseter muscle, both vertical incisions extended to the supra clavicular region, dissection of elevation started from supraclavicular region and the free end of the flap passed through a tunnel under the angle of the

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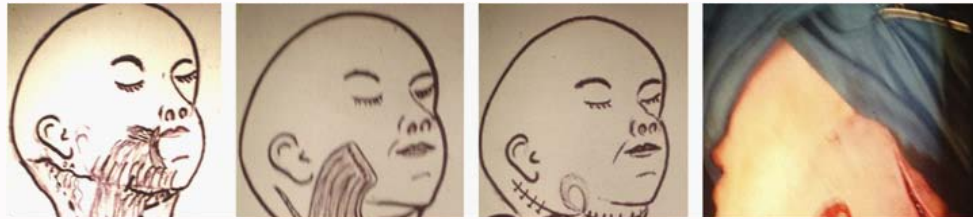


Figure 1:

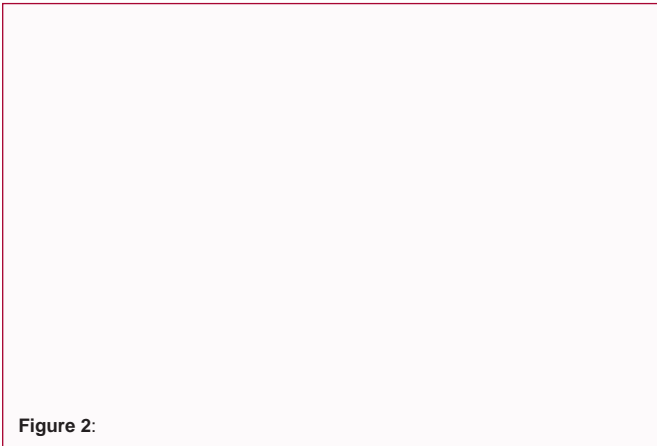


Figure 2:

mandible to the oral cavity for reconstruction of lateral side of the tongue after hemiglossectomy, lower alveolus, floor of the mouth and cheek. Orocutaneous fistula occurred and usually it does close within 2-3 weeks and reconstruction of submental region in cases with posttraumatic war injuries no orocutaneous fistula occurred.

The advantage of this flap is superiorly based with arc of rotation of 90°, it is one stage operation, it is not hairy like forehead flap and required 2 stage operation, the thickness of the flap was well tolerated by the oral structures while forehead flap is a thick flap and leave defect in the forehead, elevation of the Kummoona flap can work as a good access to radical neck dissection.

Kummoona flap also been used for reconstruction of the lip, submental region in post-traumatic missile injuries of the face before grafting of the missing bone from the mandible.

The flap been tested by experimental research on Rabbits to assess the viability of the flap.

Clinical application

Clinical cases were reported of 75 patients, 37 males and 38 female, age ranging between 5-81 years (mean 46 years), these cases were 61

cases with oral carcinoma and they are 25 cases of well differentiated squamous cell carcinoma, 24 cases with moderately differentiated squamous cell carcinoma and 12 cases with poorly squamous cell carcinoma (Figure 2).

Our policy to manage these cases by using all tools including radical surgery, with deep X-ray therapy and 3 courses of chemotherapy including (5Fu+Tosert+Carpitol).

Four technique been used by LCF;

1. Reconstruction of oral cavity after radical cancer surgery.
2. Reconstruction of perioral tissue in cases with posttraumatic missile war injuries.
3. The use of LCF as an access for radical neck dissection as window without using flap for reconstruction.
4. The use of platysma muscle for reconstruction of atrophied masseter muscle in cases with first arch dysplasia syndrome.

This is an introduction about LCF its importance as an excellent technique for reconstruction of oral and perioral structures of the face.

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