Case Report

IMMEDIATE RECONSTRUCTION OF MOUTH FLOOR WITH BILATERAL STERNOCLEIDOMASTOID MYOCUTANEOUS FLAPS IN AN ACUTE GUNSHOT WOUND CASE

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ABSTRACT

Although new treatment modalities like free flap management techniques have been widely performed, the sternocleidomastoid (SCM) flap still offers one of the best choices in repair of defects in the head and neck region. In this case, there was full-thickness soft tissue defect in the floor of a twenty year-old man's mouth due to a high velocity missile injury. It was reconstructed by using bilateral SCM flaps successfully because it was the most reliable and versatile technique and neglected more complicated procedures.

Key Words: Sternocleidomastoid flap, Mouth floor, Head and neck reconstruction.

INTRODUCTION

Since the introduction of the sternocleidomastoid (SMC) flap for reconstruction of surgical wounds after resection of head and neck cancers almost 20 years ago, this flap has been reported to have variable success (1,2). After widespread usage, most surgeons have abandoned the technique as their primary choice (3). Ariyan, in his recent publication, reported 31 consecutive reconstructions in the oropharyngeal area and concluded that this regional flap was readily available and was still useful in selected patients (4).

The SCM may be incorporated in a flap on either its superior or inferior attachment. The three blood supplies to the SCM muscle are from the occipital artery above, the thyrocervical trunk below and the superior thyroid artery in the midportion (4).

CASE REPORT

A twenty-year-old man presented committed suicide with a rifle placed against his subtemporal region. As he fired, the high velocity missile entered his face through this region and exited from the right frontal sinus, sparing the frontal lobe but leaving wide soft tissue defect in the mouth floor, a wide bone gap in the maxilla, multiple lacerations on the tongue and fractures of the mandible. Full thickness tissue in mouth floor, from the skin to oral mucosa, surrounded by mandibular bone and tongue base and right half of the hard palate were lost. As soon as he was admitted to the Emergency Service, he was...
Immediate reconstruction of mouth floor with bilateral SCM flaps

Fig. 1: SCM flaps for (a) mouth floor and (b) submental area reconstruction.

taken to the operating theatre. First his tongue and the missile exit site were sutured. The wide maxillary bone defect was replaced with an iliac crest bone graft and covered by an adjacent buccal mucosa flap. His mandible was fixed by using the miniplate osteosynthesis system. For the large soft tissue defect in the floor of the mouth, SCM flaps were prepared bilaterally, one was proximally and the other distally pedicled (Fig. 1). The former was transferred via subcutaneous tunnel to mouth floor and the latter to the submental area to cover the defect. Double SCM tissue ensured sufficient bulkiness to support the base of the tongue (Fig. 1). The flap on the entrance site was well organized. On the other hand, the one on the mouth floor sustained epidermal necrosis, but healed completely in 2 weeks (Fig. 3). Unfortunately, the bone graft on to the maxilla was partly sequestered. After debridement and a convalescent period, this site was treated with secondary bone grafting and transposing flap for coverage from the adjacent palatal mucosa.

DISCUSSION

The principle of reconstructive surgery in the head and neck region are identical to those elsewhere in the body. The difficulty is the need for improvement in the patient's function structure and appearance. Failure to provide improvements in any of these areas yields a poor result. Many small defects can be closed by simply reapproximating tissues or by applying a simple skin graft. However, large defects require more sophisticated reconstruction using a variety of local, regional or distant flaps depending on the specific needs of the patient (5).

Although pedicled flaps such as pectoralis myocutaneous flap, latissimus dorsi myocutaneous flap and trapezius myocutaneous flap are the most used ones, the sternocleidomastoid myocutaneous flap is very versatile and useful in head and neck region (6). The cause is threefold. First, it is the nearest flap to this region. Second, it can be either superiorly...
In these conditions, the SCM flap is one of the best serving technique (7).

In contrast to more detailed and complex treatment modalities, the SCM flap is still a simple and reliable option in the reconstruction of the mouth floor and can be used in acute management of gunshot wounds. On the other hand, the circulation in skin paddle on the SCM flap is unreliable (3). As Ariyan stated (4), a considerable number of SCM flaps to the mouth floor sustained epidermal necrosis but healed without necessitating secondary procedures. This also happened in our case. In our opinion, epidermal necrosis on the flap followed by regeneration resulted in a more natural appearance and texture than its original state.

REFERENCES


or inferiorly pedicled. Third, donor sites can be closed primarily. With today's advanced techniques of microsurgery, it is possible to reconstruct the large defects by using free flaps. But, unfortunately, it is not always reasonable to apply these techniques to all patients. The patient may not tolerate such hard surgery or he may need a quick technique with minimal risks.