



RECONSTRUCTION OF SOFT TISSUE DEFECT IN THE MALAR REGION BY BURROW'S ADVANCEMENT FLAP


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ABSTRACT

The facial region represents a window to the complete personality of a person. Cosmetically it is a very important part of a person's aura. There are many situations when due to disease or trauma facial defects arise, which require reconstruction. A 21 year old female patient reported to the Department of Oral and Maxillofacial Surgery, Sri Aurobindo College Of Dentistry, Indore with a history of road traffic accident. The patient suffered from facial injury involving her right malar region. Clinically no bony injuries were appreciated. Approximately 3.3 cm soft tissue loss was present over the right malar region below the right lateral canthus of eye. Undermining was done till right lateral wall of nose anteriorly and pre auricular region posteriorly, 2 cm incision given along one side of the base of the defect only for burrows advancement flap (like a half A-T flap) and undermining the surrounding soft tissue to enable the advancement of the flap into the defect. Burrow's advancement flap is a practical and simple technique that adds to the armamentarium of reconstructive procedures for the malar defects.

Key words: Facial defects, Reconstruction, Burrow's advancement flap.

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INTRODUCTION

Reconstruction of defects of the face remains one of the most daunting tasks for maxillofacial surgeons. Facial region represents a window to the complete personality of a person and there has been an increasing demand for aesthetic surgery in the recent times. When the facial aesthetics are disturbed by trauma or ablative surgery, the reconstructive surgeon's skills are put to the greatest test [1].

Many facial reconstructive surgery techniques have evolved during the early twentieth century after the two world wars. Currently victims of road traffic accidents or those having undergone ablative surgery; comprises the vast majority of patients needing facial reconstructive

surgery.

Utility of cutaneous flaps, tissue expansion, advancement flaps, free tissue transfer, and biomaterial implantation have helped to refine the reconstructive surgical techniques and have also expanded options available [1].

The advancement flap is a modality of skin defect closure via mobilization of tissue along a linear direction. It is one of the most versatile flaps used commonly in maxillofacial surgery [2].

The factors that determine the type of flap reconstruction include the depth, size and location of the tissue defect, the elasticity of adjacent tissues and the relations of the defect to adjacent anatomical landmarks. The defects around the eyelids, eyebrows, glabella, forehead, temple, medial and lateral canthus regions can be repaired by using advancement flap techniques.

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CASE REPORT

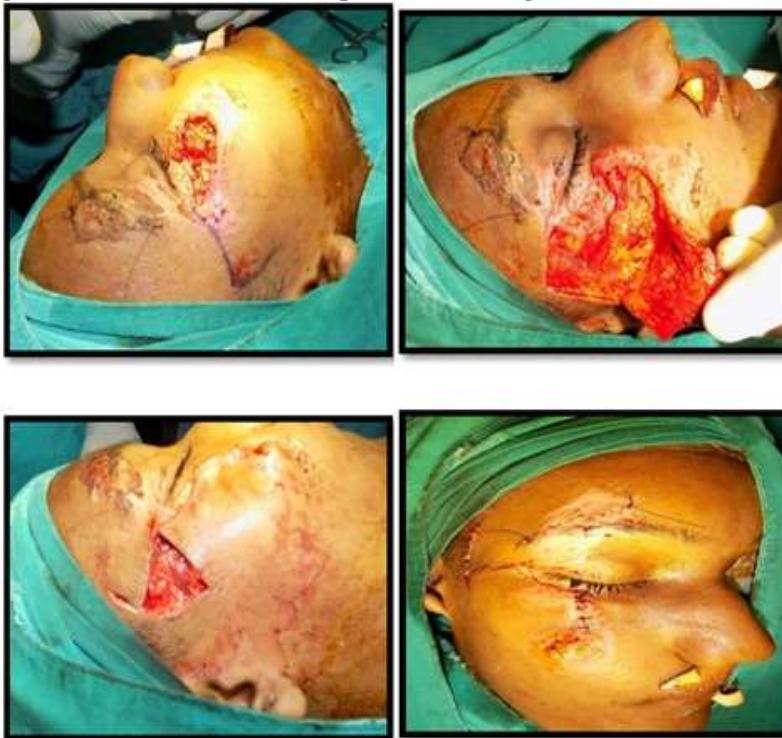
A 21 year old female patient reported to the Department of Oral and Maxillofacial Surgery, Sri Aurobindo College Of Dentistry, Indore with a history of road traffic accident for which patient received primary treatment in a district hospital. The patient suffered facial injury involving her right malar region (figure 1). When the patient reported to our department, the right malar was covered with dressing and on exploration signs of soft tissue loss was seen. Mild edema was present over the middle third of face. Clinically no bony injuries were appreciated. Approximately 3.3 cm soft tissue loss was present over the right malar region below the right lateral canthus of eye. Intraoral examination revealed a stable occlusion and no hard or soft tissue injury was present intraorally.

Intra operatively, the necrosed part from the malar region was removed and debridement was done with hydrogen peroxide and normal saline (Figure 2). Undermining was done till right lateral wall of nose anteriorly and pre auricular region posteriorly, 2 cm incision given along one side of the base of the defect only for burrows advancement flap (like a half A-T flap) and undermining the surrounding soft tissue to enable the advancement of the flap into the defect. Flap advanced and buried sutures given to approximate the margins. A 2 cm back cut incision given lateral to the lateral canthus of eye, flap rotated and sutured 1 cm away from hair line, buried sutures given with 3-0 vicryl. Skin closure was done at malar region with 4-0 nylon by interrupted sutures (Figure 3). Closure was done with 4-0 nylon by sub-cuticular suture.

Fig 1. Frontal and lateral view showing facial injury involving right malar region



Fig 2. Debridement of necrosed part of malar region and incision marking





DISCUSSION

Soft tissue defects of the malar regions following trauma may result in considerable disfigurement, functional derangement, and distortion of the adjacent tissue. Traumatic injuries of the malar region are common following a fall from the motorcycle, or in cases of severe facial abrasion following a fall and drag along a roadway. There is a need for soft tissue coverage which addresses all three defects simultaneously while preventing functional deficit and distortion of the adjacent tissue [3]. The ideal reconstruction should avoid creating a “trap door” deformity, dog ear formation, ectropion, and sideburn displacement [4]. Various local flaps such as the rotation flap, transposition flap, advancement flaps, rhomboid flap, bilobed flaps, and “reading man” flaps can be employed for the reconstruction of such defects. Most of these flaps have been described for reconstruction of circular defects following tumor resection. Although rhomboid, bilobed and reading man flaps provide soft tissue coverage, they may result in scar formation secondary to the multiple incisions required for flap execution [1,4,5]

The advancement flap is a modality of skin defect closure via mobilisation of tissue along a linear direction. It is one of the most versatile flaps used commonly in many surgical discipline including maxillofacial surgery. Over the years, modifications to the basic advancement flap techniques have been described that included different methods and patterns of flap creation and the use of multiple advancement flaps [2]

The Burow’s triangle flap is a type of advancement flap created by incising along one side of the base of a defect only (like a half A-T flap) and undermining the surrounding soft tissue to enable the advancement of the flap into the defect. A second Burow’s triangle created from this single flap advancement at the end of the flap distal to the primary defect may then be excised. The Burow’s triangle flap has the advantage of having a wide, well vascularized pedicle and the ability to

position the standing cone in and subsequently remove it from a site that is away from the primary defect, or other structures which are to be avoided. The disadvantages of this technique include limited flap mobilisation offered by a single flap (unlike the double advancement flaps like the A-T plasty) and the formation of a larger second Burow’s triangle. The latter can be minimised by lengthening the flap incision [6]. Wang [7] et al recently reported this flap reconstruction technique to close a lateral forehead defects as well. Kouba [8] et al also described a modified Burows triangular flap (named as J plasty) that is useful in the repair of malar cheek defects near the orbital rim.

CONCLUSION

Reconstruction of facial defects by local flaps is a very easy and cost effective technique [9]. Burrow’s advancement flap is a practical and simple technique that add to the armamentarium of reconstructive procedures for the malar defect.

STATEMENT OF HUMAN AND ANIMAL RIGHTS

All procedures performed in human participants were in accordance with the ethical standards of the institutional research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. This article does not contain any studies with animals performed by any of the authors.

CONSENT

Informed consent of the patient was obtained.

ACKNOWLEDGMENTS

Nil

CONFLICT OF INTEREST

No interest

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