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7.3.1 Le Fort I

Le Fort I osteotomy was first reported by Cheever (1865) for access to a sinus tumor. In 1927, Wassmund described it as a procedure for open bite correction. Obwegeser popularized this technique for maxillary advancement. The "down fracture" terminology and the biological basis of the technique were introduced by Bell et al in 1975. This osteotomy's versatility allows moving the maxilla in all possible directions, however, the extent varies due to anatomical reasons. For example, the setback or retroposition of the maxillary unit has some limitations because of the pterygoid plates. A maxillary vertical elongation leads to loss of bone contact and makes bone grafting of the defects a requirement.

Since the osteotomy line is not truly horizontal, care must be taken because total advancement may cause changes to the final vertical position of the maxilla. In order to avoid this ramping effect, a step osteotomy is an option for a proper horizontal movement.

1 Technique

In single-jaw surgery one interocclusal wafer or splint is needed and two splints are necessary for double jaw surgery. These splints are the key to positioning. Prior to surgery, it is necessary to check whether they fit to both dental arches correctly.

It is important to measure the vertical position of the maxillary incisor edge in a reproducible way. Depending on the esthetic goals of surgery one may decide to leave this unchanged, or to superiorly reposition the incisor teeth, or to achieve less incisor exposure, or to inferiorly reposition the incisal edge for greater incisor exposure. A vertical distance from a fixed reference point to the edge of the central incisors must be measured and recorded. Some surgeons prefer to temporarily anchor a screw into the glabella to establish a firm reference.

A U-shaped incision from first to first superior molars (**Fig 7.3-1**, page 353), 3 or 4 mm above the attached gingiva is performed, and subperiosteal dissection is done to expose the inferior aspects of the maxilla, the infraorbital nerve, the zygomaticoalveolar buttress, and the piriform aperture on both sides. Bone markers (guidelines or holes) may be applied across the line of osteotomy to check or control maxillary movements.