Case Report

A Case of Maxillo Palatal Mid Face Fracture

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Abstract

The maxilla located in the mid face between strong frontal bars and the andibula. The maxilla consists of a body and four processes: Frontal, zygomatic, palatine, and alveolar processes. The body involves a space to form the maxillary sinus. Different, patterns of maxillary fractures were defined by René Le Fort, which he designed “lines of weakness” and he also described sagittal fractures of the maxilla and palate.

In our case, the intensity and direction of the impact caused to a whole fragment. The fractured bones that were laid in the same unit. The nasal-maxillary triangle and alveolar processes and teeth of the maxilla and a half shelf of the palate. The presented case is of interest because of the maxillary and midline sagittal fracture of the palate, in a monoblock form displaced excessively posteriorly, it has satisfactorily restored preinjury occlusal relationship. Stabilization is achieved by applying plate fixation.

INTRODUCTION

Different patterns of maxillary fractures were defined by René Le Fort around one hundred years ago. Le Fort also described sagittal fractures of the maxilla and palate in his studies [1]. Split palate and sagittal maxillary fractures are less commonly encouraged than the other types of Le Fort fractures [2]. Alveolar processes are strong horizontal system and the palatal shelves support posterior aspect of the alveolar arc [3]. However, maxilla has relatively weak sagittal buttresses. Eight percent of midface fractures are accompanied by fractures of the palate [4]. Palatal fractures have been classified by a number of authors on the basis of fracture location, surgical approaches to be employed and stabilization preferences [4-6]. The involvement of maxillary alveolus in the fracture results in difficulties in the maintenance of maxillary dental alignment post-fracture fixation.

CASE PRESENTATION

A 59-years old man sustained blunt trauma on his face and trunk in a motor vehicle accident. Symptoms included minimal lip laceration and oro-nasal hemorrhages. Computed tomography showed excessive posterior displacement of the maxilla. There were foreign materials in the form of broken glass pieces embedded in the oral and pharyngeal mucosa. The patient also had multiple rib fractures and hemo-pneumothorax.

Considerable displacement of the maxilla was threatening the airway of the patient. Therefore, appropriate steps were taken to secure sufficient ventilation and stop hemorrhages. The patient was transported to the operation theatre. Preparations for tracheotomy were in place in case of requirement. The maxillary fragment was positioned manually after sedation. The upper respiratory tract was aligned to accept nasal intubation. Dingman mouth gag was placed for sufficient exposure.

In this fracture, one half of the face was completely detached from the entire midfacial skeleton and was suspended by the soft tissue attachments only. The maxillary fracture that was Lefort-II type and bearing half of the palate detached from the zygomatic and nazofrontal buttresses, and the pterygoid plate. The palatal fracture extended along the median line to the anterior of the bicuspid tooth. The monoblock fragment was mobile and displaced far too posteriorly (Figures 1, 2, 3).

The midface was seated in its former proper position and it was adjusted and fixed to the base of the cranium. The split palate fracture was fixed prior to the other affected areas. Then the buttresses were plated (Figures 4, 5). Immediate reconstruction for replace the missing anterior maxillar sinus wall was not performed. No complications were evident significantly during a year-long follow up. Although nasal airway was affected,
The maxilla is surrounded by oral, nasal and orbital cavities, it also bears the sinusoidal cavity in its structure. The frontal region and the mandible are firm sagittal buttresses, so are the alveolar and palatal processes of the midface. Mid face is considered not particularly conductive in maintaining stability. Fractures in this region are comminuted. Since the frontal region and the jaw form the main sagittal buttresses, most trauma cases involving this areas. Thus, there are multifractures. This situation is referred to as midface “dependent structure” [7]. Not with standing, description as “dependent structure”, midface fracture is the single form in the encountered case.

Palatal fractures are classified according to their anatomic locations and the surgical approach to be employed. Different surgical therapeutic approaches employed for the same pattern of fracture has resulted in the development of various classification methods [5].

Palatal fractures are evaluated together with maxillary sagittal fractures. However, Chen, et al, classified palatal fractures into sagittal, transverse, and comminuted, excluding alveolar fractures from their classification [5]. In accordance with the requirement, intermaxillary fixation, palatal splinting, wiring, alveolar ridge, and palatal vault fixation can be used individually or in suitable combinations for the treatment of the palatal fractures.
In sagittal fractures, occlusion becomes difficult because of rotation post-fixation. An intermaxillary fixation with figure-of-8 wiring is recommended to treat palatal fractures [8]. Nevertheless over-riding of the mobile fragments may occur. Furthermore, the practice will be impossible with this manner, if the patient has an unhealthy and unreliable dental structure. Our preference is the plate application in all favourable conditions so formed essential bony union by means of stable compression [9].

Because of the large size and monoblock nature of the fragment in our case, plate application proved to be relatively straightforward. Plate use and screw fixation has replaced the conventional methods. Patients can still be followed up after discharging without significant complication risk, even if, come into existence of plate-exposure [6]. In order to avoid ischemic states of the bone tissue, the palatal flaps should be removed by delicate incisions. The presented case is of interest because of the maxillary and midline sagittal fracture of the palate, in a monoblock form displaced excessively posteriorly, which was easily fixed.

REFERENCES


