A Case of Rehabilitation of Oral Function with Dental Implants Following Panfacial Bone Fracture

Hyung-Sik Do, Young-II Song, Hwan-Yong Jang, Jin-Yong Lee, Jae-Hyung Lim, Hyun-Seok Jang, Jong-Jin Kwon, Jae-Suk Rim, Eui-Seok Lee

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Objective

Panfacial fractures involve trauma to mandibular and maxillary bones. It requires a team approach for management and planned treatment plan. A functional and esthetic rehabilitation was successfully accomplished by using a partial removable dental prosthesis in the maxilla and Ramus block bone and allogenic bone graft with dental implants to support fixed dental prosthesis in the mandible.

Study Design (Case Report)

1. Sex / Age : Male / 31
2. C.C : Panfacial fracture Missing teeth due to trauma
3. Clinical history : Patient was involved in a motor-cycle collision on september 9, 2011, and pelvic bone fracture, malar and maxillary bones fracture, mandibular symphysis fracture, laceration on tongue and chin. He also had laceration on right nasolabial fold, loss of several teeth, alveolar bone fracture.
4. Missing teeth : #11, 21, 22, 34, 33, 32, 31, 41, 42, 43
5. Treatment plan : Open reduction and internal fixation on fracture site. To get a sufficient depth of bone for the dental implants, we decided to use ramus block bone and allogenic bone graft on maxilla and mandible. We plan to use a partial removable denture for the maxilla and insert the Osstem TS system implants in the mandible.
6. Treatment process

Fig. 1. Three-dimensional CT and Skull x-ray photo showing panfacial fracture. Maxilla and mandibular teeth were missing.

Fig. 2. Postoperative Skull x-ray photo showing open reduction and internal fixation on panfacial fracture. A: Rt. lateral oblique mandibular x-ray photo B: Mandibular PA view x-ray photo C: Lt. lateral oblique mandibular x-ray photo

Fig. 3. Ramus block bone graft and allogenic bone graft on maxilla and mandible.

Fig. 4. A: Panoramic radiograph of block bone graft B: Panoramic radiograph of dental implants after placement C: Panoramic radiograph of dental implants with custom abutment D: Intraoral view of dental implants with custom abutment

Fig. 5. Metal framework for mandibular implant supported restoration
Conclusions

This clinical report describes the prosthodontics treatment after the open reduction of a panfacial fracture. After the operation of such complex traumas, the locations of the fractured segments and the occlusion are distorted and present a challenge to us, resulting in problems such as facial deformation, inefficient mastication, and mal-function of the TMJ.

In 2013, restoration was completed with final prosthodontics. In upper jaw, we treated the patient with removable partial denture because of the alveolar bone and tissue deficiency.