Management of Maxillofacial Trauma in Attempt Suicide Patients During COVID-19 Pandemic

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Abstract: The maxillofacial surgeon trained well to face the surgical challenges. In case of dealing with self-inflicted trauma, the surgeon must face the surgical as well as the psychological status of the patients. Five patients received in the emergency room suffering from maxillofacial trauma resulted from suicidal attempts. Unfortunately, 1 patient died, the other patients managed by providing surgical and psychological support. The cornerstone of managing such type of trauma needs appropriate communication between the family, surgical team, and the psychiatric.

Key Words: Coronavirus, COVID-19, lateral cervical flap, maxillofacial trauma, orocutaneous fistula, suicide

Coronavirus family is highly infectious; it could remain on surfaces for several days especially plastic, where the virus could persist longer than other surfaces. In the emergency room, all the patients should be considered infectious with this virus family until proven otherwise. New ideas and devices introduced to literature to protect the medical staff, some of these devices are three-dimensionally printed, and others used smartphone applications for diagnosis.

Suicidal self-inflicted injury with an intention to die increased dramatically during the COVID-19 pandemic, which was related to depression and anxiety associated with economical and familial bad experiences, in addition to the psychological impact of isolation and the fear of morbidity and mortality related to this virus.

From the maxillofacial point of view, the suicidal patient management differs from the nonsuicidal traumatized patients in the terms of the type of injury, the close relation with the facial structures, the psychological background, and the patient unwillingness to live anymore. Most commonly, they accept the lifesaving procedures without extensive multistage surgeries to reconstruct the disfiguring facial structures such as flaps or even the long-term follow-ups.

Submental high-velocity gunshot wounds result in hard as well as soft tissue loss, mostly complicated by nasal airway damage, trauma to the orbital structures, loss of mandible, and maxillary bone and teeth.

The aim of the study was to assess how the management of suicidal patients differs from traditional trauma patients.

MATERIALS AND METHODS

Five patients were admitted to the Ghazi Al Hariri hospital for surgical specialties (Baghdad/Iraq) suffering from a self-inflicted injury to the facial region by placing the gun or assault rifle under the chin in an attempted to suicide. These trials of suicide resulted in nonlethal disfiguring facial trauma.

The sources of firing were close to the mandible (less than 5 cm). All the patients were admitted to the hospital immediately after the injury. The computed tomography was used as an initial assessment tool to check for the extension of the trauma. The opened wounds sutured in the emergency room while preparing for the operation (Fig. 1A-B). All the entrance points were at the submental area (Fig. 1C) with perinasal exit wounds.

The first surgeries were to stop bleeding, debridement, immobilization of the fractured bones, approximation of the avulsed tissues, and suturing.

The last step in the management of such cases was prosthetic rehabilitation of the denition to reconstruct the proper occlusion. In all the periods of the management, there was continuous psychological support for all patients.

RESULTS

All the procedures were performed under general anesthesia, 3 of them with a tracheostomy tube and 2 of them with nasal intubation. All the patients were males, the mean age of them was 39.8 years old (age range from 16 to 60 years old).

The extension of the hard tissue trauma was as follows; in 3 cases the mandible was involved, in 1 case the mandible and maxilla, and in 1 case the mandible, maxilla, and the nose.

The number of surgeries was 4 surgeries in 2 patients, 2 surgeries in another 2 patients, and 1 surgery in 1 patient. COVID-19 positive proved in 1 patient preoperatively during preparation for surgery. The bone graft was needed (iliac bone graft) only in 1 case to reconstruct the continuity of the mandible. Bone graft failure and orocutaneous fistula occurred in 1 patient (Fig. 1D-E). Unfortunately, 1 of the patients (16 years old) died due to meningitis.

DISCUSSION

Management of self-inflicted maxillofacial injuries is challenging, not only repairing of the hard and soft tissue damage is required but the psychological status of the patient also needs to be managed. The other factor nowadays is the COVID-19 pandemic, which increases the difficulty of the operations for the surgeons because of the heavy scrubbing with more sweating, difficult breathing, and multi-glass or face shield layers affecting the function of vision. In addition to that, the viruses may be intense in the oral cavity; the site
of our work. Testing for COVID-19 is required before major surgery in our hospital. Only 1 case revealed positive, which increased the time of preparations before surgery. However, the management of the patients at initial presentation in the emergency room follow the protocol as all the patients are COVID-19 positive until prove otherwise.\(^9,10\)

One of the cases (male/16 years old), who had a fracture in the mandible discharged from the hospital after immobilization and fixation, returned to the emergency room with cerebrospinal fluid (CSF) leak causing meningitis (late presentation) and subsequently died, unfortunately. The reason was a delayed CSF leak due to a hidden, not discovered base of the skull trauma. Although the traumatic CSF leak is uncommon, the infection and mortality rate with persistent leakage is remarkable.\(^11,12\)

The iliac bone is the more suitable donor site, it provides a good volumetric replacement of the lost bony part of the mandible; usually the anterior part. However, it has more rate of bone resorption and failure than other bones.\(^13–16\) One of the cases undergone surgery under general anesthesia to remove an infected and exposed bone graft and plates with heavy debridement of the surgical site.

The orocutaneous fistula is troublesome to the surgeons, as the continuous pooling of saliva causes failure of the repair. The management of the orocutaneous fistula differs according to the site and size of the defects.\(^17–19\) After 2 failed surgical procedures to close the orocutaneous fistula, the third surgery was succeeded to close it; the nasogastric tube was used to decrease the saliva stimulation in the oral cavity.

The lateral cervical flap is a good choice to fill the defects in and around the oral cavity.\(^20,21\) It was used to close a large defect in the floor of the mouth. The heavy growth of the hair in the oral cavity (Fig. 1F) was managed by laser therapy, it became less apparent but it failed to remove it completely.

Management of patients who tried to kill themselves is difficult, attempts should be done to convince them to undergo the proper treatment even if it becomes long-lasting and to prevent the suicide trial again. These attempts require cooperation between the surgical team, psychiatric, and the most important the family of those patients.

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