

# Uncommon or Rear Disorders Affecting the Face due to Maxilla Facial Trauma

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## Abstract

The diagnosis of the uncommon and rear disorders, together with the postoperative complication of trauma affecting the face, and the treatment of such disorders are discussed. A male 22-year-old admitted to our center sustained a trauma to the right parotid region. The patient complained of unilateral weakness on (right side) of the face, dysarthria, loss of taste, the jaw deviated toward the right side on opening, unable to raise the upper right eyelid, and defect in hearing in the right ear.

**Keywords:** Condylar hyperplasia, cranio-maxilla facial trauma, facial asymmetry, maxillofacial trauma

## INTRODUCTION

The rear and uncommon disorders in maxillofacial trauma, due to damage to the cranial nerves, the olfactory nerve, the oculomotor nerve, the trigeminal nerve, the facial nerve, and the hypoglossal nerve, when the trauma to the base of the skull been involved in such trauma, have been investigated.<sup>[1,2]</sup>

## CASE REPORT

A male 22-year-old admitted to our center sustained a trauma to the right parotid region. The patient complained of unilateral weakness on (right side) of the face, difficulty on speaking (dysarthria), loss of taste, the jaw deviated toward the right side on opening, unable to raise the upper right eyelid, and defect in hearing in the right ear.

## Investigations

The investigations which been done by computed tomography (CT) and magnetic resonance imaging (MRI) showed a trauma to the motor neurons due to linear fracture of the base of the skull.

Clinical exam of the facial nerve (VII), this nerve controls the movement of the expression muscle and also carries impulses to the lacrimal gland, sub mandibular and sub lingual salivary glands, all the above glands been effected (overflow secretin) due to the damage of the facial nerve. The facial nerve also gives branches supplying the stapedius muscle in the middle ear, which is the cause of loss hearing (hyperacusis) due to the paralyzes of this muscle because of the facial nerve damage.

The same investigations were done to the olfactory nerve to exclude any damage which causes anosmia, although the patient complained of loss of taste rather than loss of smell.

The trigeminal nerve had been examined for any damage which causes loss of sensation (hypoesthesia) in its distribution. Trigeminal nerve gives motor division which supplies the muscles of mastication which causes the jaw to deviate toward the right side on opening when damaged.

The test sensation from the interior two-third of the tongue, the secretions of the submandibular, sublingual, lacrimal, glands been affected by the trauma.

Oculomotor nerve had been investigated and found to be damaged (it supplies the muscles which raise the upper eyelid) which caused drooping the upper eyelid (ptosis).

The hypoglossal nerve had been examined, as with the others cranial nerve by CT and MRI to exclude any trauma or fracture to the base of the skull (in this case, it had been found fracture of the base of the skull), and as this nerve is the motor supply to the muscles of the tongue, so the movement of the tongue

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**Table 1: Facial disorders in ten patients sustained facial trauma**

Type of injury	Disorder	n
Car accidents and war injuries	Weakness of the effected side	2
	Hypoesthesia	2
	Ptosis	1
	Dysarthria	1
	Anosmia	0
	Hperacusis	1
	Deviation of the jaw	2

**Table 2: Clinical review of ten patients shows condylar posttraumatic hyperplasia due to trauma**

Age	Sex	Hyperplasia shown
20-28	Male	3
20-28	Female	1
30-60	Male-female	0

had been restricted which gave the deviation of the tongue toward the effected side which caused (dysarthria) as shown in Table 1, especially for the lingual sound.

The following test had been done:

- Schirmer’s test for lacrimation to see the wetting on both eyes by applying a strip of filter paper
- The facial nerve stimulation (needle electromyography) had been done to assess the degree of the damage.

The clinical examination showed normal vital signs and routine hematological examination was done which found to be normal. The patient was being operated through an extraoral approach under general anesthesia with oral endotracheal intubation to reduce the right zygomatic bone which had been fractured due to the trauma, together with closure of the wounds in the face.

### The treatment

The patient showed a reasonable recovery by treatment with prednesolone 20 mg four times a day for 7 days then reduced gradually. One year later, the patient returned to the center with a complaint of asymmetry of the face due to the previous trauma of the right parotid region and temporomandibular joint (TMJ) with a nonfracture condyle (subclinical) fracture of the condyle which was not detected by the ordinary X-ray at the time of trauma.

Clinical examination and X-rays showed a posttraumatic condylar hyperplasia on the other (contralateral) side of the trauma. Hyperplasia is increasing in the total number of the cells due to increased activity. Hyperplasia exists only as long as that activity or the stimulus is applied. However, when hyperplasia is removed, the tissue returns to normal. A secondary structural alteration in the general architecture of the condylar hyperplasia due to an accompanying degeneration may render a complete return to normality impossible which is a rare and uncommon complication of the trauma of the TMJ, affecting young adult male more than young adult female (2:1) as shown in Table 2.

The patient had been operated through extraoral approach under general anesthesia with nasoendotracheal intubation



**Figure 1: Patient before and after osteotomies**

through an incision at the posterior border of the ramus.<sup>[3,4]</sup>

The prominent feature includes enlarged mandibular condyle, outward bowing and downward growth of the body, and the ramus of the mandible causing fullness of the face on the effected side and flattening of the face on the other side with a deviation of the chin and malocclusion of the teeth.<sup>[5]</sup> Mandibular osteotomies together with bilateral sagittal and oblique sliding vertical ramus osteotomies were done on the affected side, which are the comprehensive surgical plan to correct the facial deformities together with the malocclusion of the teeth, it is the treatment of choice to restore the facial symmetry<sup>[6]</sup>, as shown in [Figure 1].

### CONCLUSION

Clinical examination to all the cranial nerves is necessary for all cranio-maxilla facial injuries, to exclude any damage to the cranial nerves, especially when the base of the skull may be involved in such injury. Postoperative follow-up for few years should be done in order to detect any late complications such as posttraumatic condylar hyperplasia.

### Declaration of patient consent

The author certifies that he had obtained all appropriate patient consent forms. In the form, the patient had given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initials will not be published and due efforts will be made to conceal his identity, but anonymity cannot be guaranteed.

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### Conflicts of interest

There are no conflicts of interest.

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