Incidence of mandibular fracture in maxillofacial trauma (a retrospective study)

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Abstract
This study presents the incidence of mandibular fractures among maxillofacial injuries, we classified the sites of these fractures anatomically and their etiologies. We found that the road traffic accidents were the most prevalent causes of maxillofacial trauma. The body and the angle of the mandible are also the most common sites to be fractured in trauma.

الخلاصة
تقدم هذه الدراسة التي أجريت في مستشفى الحلة الجراحي من عام ٢٠٠١-٢٠٠٢ حالات إصابات الفك السفلي (كسور الفك السفلي) من بين إصابات الوجه والفكين، وكذلك توزيع الإصابات من حيث الموقع التشريحي للفك بحد ذاته. اضافة الى أسباب حدوث الكسور والتي وجد ان أكثرها كانت نتيجة حوادث الطرق وحالات الشجار. كذلك تعطي هذه الدراسة مقارنة بين نسبة حدوث كسور الفك الأسفل في محافظة بابل مع باقي النسب من خلال دراسات عالمية في بلدان أخرى لكي تكون مراجع بسيطة يمكن الاستفادة منها.

Introduction
Maxillofacial trauma is considered as one of major important trauma among other traumas that happen to the body. Fracture of the mandible on the other hand has been considered as the more common fracture than the others in the facial region. This study is carried out for the first time in(Al Hilla) city. Many other studies were carried out in several countries such as a study by Killy (1), Igzeer (2).
One year retrospective study on (52) patients with maxillofacial trauma to estimate the incidence of mandibular fracture is carried out in the city above in (2002).

Materials and methods
Fifty two patients were examined for mandibular fracture in Al hilla surgical hospital. Investigations were including conventional radiography and computerized tomography.
Clinical examinations were carried out in the department of maxillofacial surgery in Al Hilla surgical hospital to detect mandibular fractures among maxillofacial trauma. A formula was done including name, address, age, sex, occupation of the patient in addition to the other informations which were related to the general examination of the head and neck regions.

Results
Among (52) patients who sustained maxillofacial trauma eighteen (18) of them

had mandibular fracture (48%) while the other fractures were distributed as shown in (table 1).

Sites of mandibular fracture were listed as follows; body of mandible 35%, condyle 25%, angle 20%, symphyses 14%, ramus 6%..(Table 2).

The etiology of maxillofacial fractures had been classified in to road traffic accident (RTA) 25 patients, falling from height (FFH) 10 patients, violence 10 patients, blast and others7 patients (Table 3).

Treatment consist of inter maxillary fixation (1MF) for 6 weeks, which is shorter in children and longer in adult, acid etching and bands, in addition to open reduction and interosseous wiring.

Discussion

It has been found that mandibular fracture is the most common type of fractures that happen in the maxillofacial region (48 %).(3).

In a study carried out by Igzeer, road traffic accidents (R.T.A) were found to be most prevalent (37%)(2). this agree with our results.

Adekeye in a study of facial fractures in Nigeria, reported that 76% were related to vehicular accidents (4).

Olson and his associates demonstrated that vehicular accidents were the cause of fractures in 48% (5). whereas in the study of Ellis and coworkers, vehicular accidents accounted for only 15% of the fractures (6).

Mandibular fractures are the only facial bone fracture in an average of 70% of the patients (3). Mandibular fractures are more common than fractures of the maxilla or of the other facial bones because of the fact that the mandible is flat and prominently exposed to trauma. (7). The weakest parts of the mandible are at the neck of the condyle and at the angle of the jaw (8).

The anatomic location of the fracture is of interest, especially the relation of the fracture line to the existing teeth in the dental arch because this relation ship governs the method of treatment. Hagan and Huelke (9) gave an excellent analysis of 319 fractures of the jaw with statistics as to cause, type and location of the injury.

Fractures in the horizontal ramus anterior to the last existing tooth are among the most common fractures and the easiest to treat because the use of the teeth for intermaxillary ligation is a fundamental method in the treatment of fractured jaws (10). Fig (1).

Additional fixation is required for treatment of fractures in horizontal ramus posterior to the last existing tooth similar to that of fractures at the angle of mandible (10). Fig (2)

Fractures of the ascending ramus, subcondylar fractures, and fractures of the coronoid process are comparatively rare (11).

Among all of those (52) patients, no serious complications have been reported except those who got facial deformity due to their refusal of treatment.

Other patients got acute osteomyelitis which is the most common complication that may occur in fractures (7), (12).

In addition parasthesia was noted in almost 4 patients during follow-up period which was extended to 6 months later, since compression is the most frequent mechanism of peripheral nerve injury occurring in association with maxillofacial trauma, the degree of injury is related to the force applied to the nerve, the duration of force application, the number and size of the fasciles, and the amount of connective tissue (13), (14).

Conclusions

It has been found that mandibular fracture is the most common type of fractures that happen in the maxillofacial region.

Road traffic accidents (R.T.A) were found to be most prevalent.

Mandibular fractures are more common than fractures of the maxilla or of the other facial bones.

The most common complication that may occur in fractures is acute osteomyelitis in addition to parasthesia.

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Table 1 distribution of facial fractures.

Site	No
Mandible	18
Maxilla	13
Zygoma	10
Blow out	2
Soft tissue laceration	9

Table 2 sites of mandibular fractures.

Site	No (%)
Body	35
Condyle	25
Angle	20
Symphyses & ramus	14&6

Table 3 etiology of facial fractures.

Site	No
RTA (road traffic accident)	25
F.F.H (falling from height)	10
Violence	10
Blast and others	7

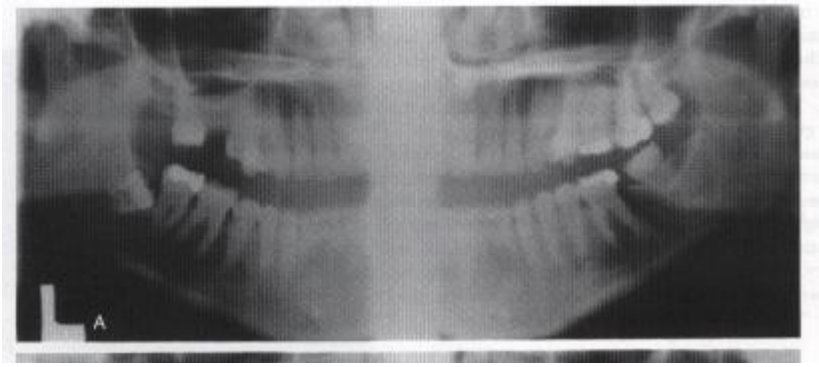

Fig (1) Fractures in the horizontal ramus anterior to the last existing tooth.

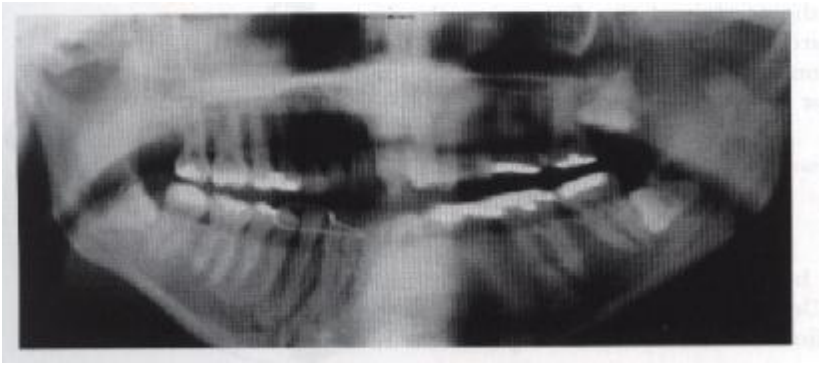

Fig (2) Fractures in the horizontal ramus posterior to the last existing tooth.