

Case Study

“Unilateral subcondylar fracture treated by close reduction: A case report”

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ARTICLE INFO

Article history:

Received: 18 March 2014

Accepted: 22 July 2014

Key words:

Cranio facial injury,
Subcondylar fracture,
trauma,
close reduction.

Abstracts:

This case report is an insight in to Oral and Maxillofacial Surgery whereby close reduction to unilateral condylar fracture is used as a means to highlighting the fact that dental surgeons require a unique understanding of the anatomy, growth considerations, healing pattern and operative management involving minimal manipulation while managing unilateral condylar fractures.¹

Introduction

It is well documented that mandibular fracture is the commonest craniofacial injury and condylar and subcondylar fractures constitute 26-40% of all mandible fractures.²

The anatomical level of the condylar fracture is divided into three sites: the condylar head (intracapsular), the condylar neck (extracapsular) and the subcondylar. Although the condyle is well protected in the glenoid fossa, its neck is a relatively fragile area region.³ Unilateral fractures occur approximately 3 times more frequently than bilateral fractures do, but bilateral fractures are not uncommon. The frequency of these injuries does not seem to differ significantly from location to location.

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The etiology of these injuries varies in accordance with both sociologic and age factors. In the Netherlands, for example, where bicycling is a common form of transportation, cycling accidents are the primary cause of condylar/subcondylar injuries. In large American cities, the most common etiology for the same injuries may be either motor vehicle accidents or interpersonal violence, depending upon the characteristics of the city. The most frequent causes of subcondylar fracture are falling while running followed by road traffic accident; act of vehicle, sports and especially in the rural area due to tube well injury in our country.⁴

This article is an attempt to understand the same and review the treatment modalities with the help of a case report.

Case report

A 30-year-old patient reported to the department of Oral and Maxillofacial Surgery

of Sapporo Dental College and Hospital, Dhaka with a history of road traffic accident. The patient was diagnosed with painful facial swelling localized over the right sub condylar region, and lateral deviation of the mandible to the right side resulting in a facial asymmetry. His medical history was found to be non-significant. Limited mouth opening and

mandibular deviation during opening and closure were observed, and mastication and speech were both affected. The clinical diagnosis was supported by panoramic radiography (Orthopantomogram). An Orthopantomogram (OPG) showed right sub condylar fracture which were not displaced.

Clinical procedure:

Closed reduction and intermaxillary fixation (IMF) chosen as a main treatment method to allow initial fibrous union of the fracture segments and obtain remodeling with normal functional stimulus.

Close reduction was performed by arch bur wiring. An arch bur was fixed in upper and lower jaw by ligature wire. Then intermaxillary fixation (IMF) was done with elastic traction for 4 week. Soft diet and rest were suggested. Instructions were given to him as for the cleaning of the teeth and arch bur with a soft tooth brush. The patient was limits.

advised to attend for follow up 4 week later. After 4 week, the patient was examined clinically and radiologically. Then elastic traction was removed followed by proper irrigation and dressing. Then ask the patient to give the bite and the bite was observed and recorded. It was noticed that the patient has a class I occlusion with anterior crowding. After 48 hour, arch bur was removed from both jaws. Then again ask the patient to give the bite and the bite was observed and recorded. It was noticed that the patient has a similar class I occlusion with anterior crowding which indicate that the patient occlusion was normal and mouth opening was within normal

Preoperative view



Fig 1: Extra-oral view



Fig 2: Intra-oral view Inability to close mouth



Fig 3: Preoperative radiology Shows fracture On right sub condylar Region

Per-operative view



Fig 1: After upper arch Bur fixation



Fig 2: After lower arch Bur fixation



Fig 3: After Intermaxillary fixation

Post operative view



Follow up: After 1 month



Discussion:

Treatment of condylar fractures depends on various factors; (i) the age of the patient, (ii) the co-existence of other mandibular or maxillary fractures, (iii) whether the condylar fracture is unilateral or bilateral, (iv) the level and displacement of the fracture, and (v) the state of the dentition and the dental occlusion.⁵ Condylar fractures may give rise to serious problems, such as growth disturbances of the face, disorders of the TMJ (such as ankylosis and dysfunction), malocclusion, and chronic dislocation and pain on the injured side. Following trauma there may be an asymmetry at multiple facial levels, including both jaws and varying degree of limited mandibular movement due to muscle spasm, edema and haemarthrosis. The management of

Conclusions:

Perhaps the collective experience of the many surgeons who treat these fractures can best be characterized as follows:

Intracapsular fractures are best treated by closed reduction.

Fractures in children are best treated closed except when the fracture itself anatomically prohibits jaw function.

Most fractures in adults can be treated by closed reduction.⁹

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