



## Case Report

# Management of bilateral mandibular fracture in a medically compromised patient: A case report

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### ABSTRACT

Inappropriate identification of a patient with a compromising systemic condition through improper history taking and interpretation, can create ineffective, or may be detrimental treatment. We frequently describe a dental treatment plan for a person with a compromising systemic condition as a compromised plan because the dental treatment might not be ideal in comparison to the treatment provided to a person who doesn't have any disabling condition. We are presenting a case of bilateral parasymphysis fracture of the mandible with multiple impacted teeth in an 18 year old mentally challenged medically compromised male.

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## 1. Introduction

Planning for any treatment in the medically compromised patient primarily involves having an understanding of the nature of the patient's disease and how it can impact their physiology and his/her response to management and post treatment healing. The optimal approach to mandible fractures in the medically or intellectually compromised person is much more limited in comparison with that for most patients.<sup>1</sup> Undoubtedly, the thought of the effect of treatment should always, in each case, be weighed on risk versus benefit ratio. Methodical and thoughtful evaluation of history, in most instances, help in formulating a treatment plan that may be individually customized depending upon the site of injury, degree of displacement and patient's age.<sup>2</sup> In medically compromised patients, the majority of the patients are usually having some associated chronic medical condition which makes them unfit for general anesthesia. Under local anesthesia, manipulation and proper fixation poses a huge challenge for the operating surgeon.<sup>3</sup>

## 2. Case Report

An 18 year old male came to the OPD of Department of Oral and Maxillofacial Surgery with chief complaint of pain and inability to eat after fall before 1 day. On clinical examination there was a clear step deformity palpable extraorally over left side of parasymphysis region at lower border of mandible. Tenderness on palpation was present over right and left side of parasymphysis region extraorally. Intraorally multiple deciduous retained teeth were present, bilaterally sublingual hematoma was present and there was a step deformity seen between 34 and 35 regions. Derangement of occlusion was seen. (Figure 1)

Systemic evaluation of patient T wave inversion, complete right bundle branch blockage and slight ST elevation was present on Electrocardiogram.(Figure 2) Chest X-Ray revealed patient had dextrocardia. (Figure 3)

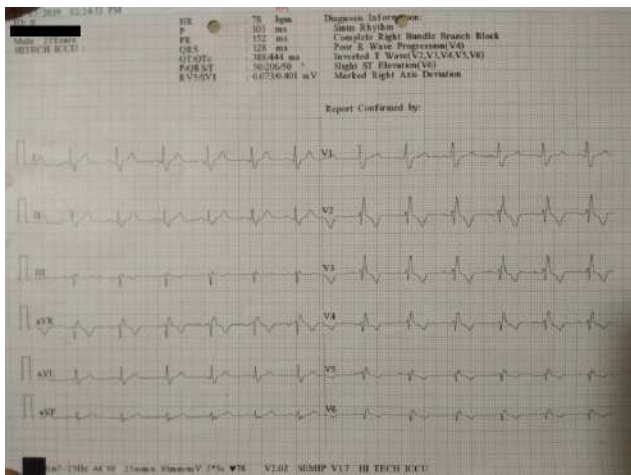
Digital panoramic view (Figure 4 ) and CBCT (Figure 5) revealed bilateral parasymphysis fracture of the mandible with multiple unerupted permanent teeth.

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**Fig. 1:** Clinical photograph - Deranged occlusion



**Fig. 2:** Patients ECG



**Fig. 3:** Chest x-ray shows dextrocardia



**Fig. 4:** Pre operative digital panoramic radiograph

### 3. Management

General anesthesia and administration of adrenalin both were contraindicated because of significant changes in the ECG and other cardiac findings, so he had to be managed by conservative means. After explaining about merits and demerits of the procedure, informed written consent was taken. Upper and lower jaws alginate impressions were taken and casts were made. With the help of hex saw, mandibular cast was sectioned at the fractured site. The sectioned segments were then reduced in accordance of maximum intercuspation with the teeth in the upper cast and stabilized in reduced position. (Figure 6) A custom made arch bar was constructed with 18 gauge stainless steel wire on reduced mandibular cast (Figure 7). Under local anesthesia without adrenalin, closed reduction of the fractured segment was done. The arch bar was then secured over the reduced mandibular arch with the help of interdental wiring (Figure 8). An appreciably good lower

border reduction at both the fracture sites can be seen in Immediate postoperative OPG. For period of six weeks, patient was kept on a soft diet and regular follow up. Arch bar was removed after six weeks and the healing was uneventful after removal of archbar.

### 4. Discussion

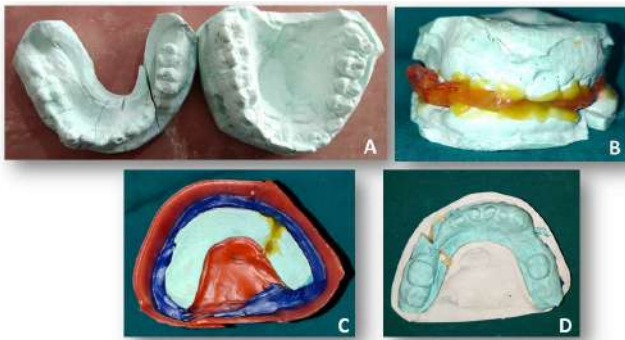
There is scant literature dealing with the type of problem encountered in our patient. Major concern with this case was adequate osseous repair. The atrophic nature of the mandible, coupled with multiple unerupted teeth approximating the line of fracture, posed potential



**Fig. 5:** Pre operative cbct



**Fig. 8:** Post operative digital panoramic radiograph



**Fig. 6:** A: Cast made after taking impressions and fractured according to radiographic fracture line; B: Occlusion achieved in accordance to opposite arch; C: Rebasing under process; D: Final cast



**Fig. 7:** Closed reduction with rigid archbar fixation

difficulties with proper reduction and stabilization of the fragments, as well as with an inadequate bony interface for healing. Possible treatment options included nonsurgical management, consisting of a liquid diet and observation, or closed reduction. Other options included external pin fixation or open reduction.<sup>4</sup> Our case may have been successfully managed with the more conservative modalities considering the minimal displacement.

The large number of impacted teeth, given a lesser amount of bone tissue in fracture lines, which provided the greatest difficulties in surgical reduction and stabilization.<sup>5</sup>

Majority of body and symphysis fractures in children are undisplaced because of elasticity of mandible and embedded tooth buds that hold the fragments together 'like glue.'<sup>6</sup> This also applies when multiple impacted teeth are present.

Slight occlusal discrepancies resulting from lack of perfect reduction correct spontaneously as permanent teeth erupt and bone undergoes remodeling with function. Non displaced body or symphysis fractures without malocclusion can be treated by close observation, blenderized diet and avoidance of physical activity. If displaced closed reduction and immobilization is performed.<sup>6</sup>

Precise anatomic reduction and three-dimensional stability of fracture segments, as offered by ORIF, may be debated for or against conservative management, but remodeling eventually occurs under the influence of masticatory stresses, even when there is imperfect apposition of bone surfaces. Thus, there is a greater degree of tolerance permissible in alignment of the fragments and restoration of occlusion, which will subsequently be corrected by alveolar bone remodeling.<sup>7</sup>

## 5. Conclusion

The article presents a special case of bilateral parasymphysis fracture of mandible. The case is unique due to its clinical presentation and systemic condition of patient. The presence of multiple impacted teeth can cause serious problems such as the development of bone diseases

and weakening of the mandible, as it happened in this case with bilateral fractured mandible.

## 6. Source of Funding

None.

## 7. Conflict of Interest

None.

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