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An unusual anterior dislocation of fractured mandibular condyle leading to psuedo-ankylosis in a 8 yr old child—A distinct case report

Ranjit Kumar P. (Dr., MDS)[a,*], Naveen G. (Dr., MS, Asst. Prof.)[b], Raja Satish P. (Dr., MDS)[c], Srinivas Chakravarthy P. (Dr., MDS, Prof.)[d], L. Krishna Prasad (Dr., Prof., HOD)[e]

[a] Department of Oral & Maxillofacial Surgery, Sibar Institute of Dental Sciences, Takkellapadu, Guntur, 522509, Andhra Pradesh, India
[b] Department of General Surgery, Katuri Medical College, Chinakondrupadu, Guntur, Andhra Pradesh, India, India
[c] Department of Oral & Maxillofacial Surgery, Sibar Institute of Dental Sciences, Takkellapadu, Guntur, 522509, Andhra Pradesh, India
[d] Department of Oral & Maxillofacial Surgery, Sibar Institute of Dental Sciences, Takkellapadu, Guntur, 522509, Andhra Pradesh, India
[e] Department of Oral & Maxillofacial Surgery, Sibar Institute of Dental Sciences, Takkellapadu, Guntur, 522509, Andhra Pradesh, India

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ABSTRACT

INTRODUCTION: Literature reviews are replete with discussions focusing on the incidence, types, and patterns of disruption in TM joint function, besides enumerating and classifying its causes. However, atypical situations do present, such situations warranting a detailed, methodical assessment before therapeutic institution.

PRESENTATION OF CASE: Described here is management of a unique case of post-traumatic pseudo-ankylosis in a 8 year old child that had an old fractured condyle, displaced and dislocated anteriorly into the sigmoid notch, with eventual fusion to the ipsilateral zygomatic arch on its medial side.

DISCUSSION: Although conventional imaging tools still have relevance, but the significance of multi detector CT scan with multiplanar reformation and three dimensional images have a become unequivocally a standard part of assessment of such complex facial injuries regardless of therapeutic setting. The probable explanation for the condylar fracture and unusual anterior dislocation of the condylar segment is also hypothesized.

CONCLUSION: Although Post traumatic ankylosis is common in developing countries like India, distinct cases do present rarely which requires a disciplined approach in the management of such cases.

1. Introduction

Kazanjian (1938) classified TMJ ankylosis, according to the site involved, into true (intracapsular) and false/pseudoankylosis (extracapsular). While true ankylosis refers to fibrous or bony ankylosis that occurs between the condylar head of the mandible and the mandibular fossa of the temporal bone, false/pseudo ankylosis refers to restriction of mandibular movement that occurs as result of pathology or physical obstruction that is outside the temporomandibular (TM) joint.Pseudo-ankylosis is less common than true ankylosis [1].

Radiographic examination is a vital diagnostic tool for the diagnosis and management of TMJ ankylosis. Although conventional radiographs such as Orthopantomogram (OPT) and TM joint tomography have been in use, imaging techniques such as computed tomographic (CT) scanning with three-dimensional reconstruction have been developed and improved. They provide the fine, unobstructed anatomic detail required to guide the surgeons [2].

Any pathology that afflicts the TM joint and restricts the mouth opening carries a mental stigma that overweighs the physical disability posed by the problem in growing children [3].

In reviewing the types and patterns of disruption in TM joint function, we describe a distinct case of pseudo-ankylosis of a low condylar fracture, anteriorly displaced, dislocated, and fused to the zygomatic arch, in an 8-year-old child that sustained an old trauma; the probable mechanism of injury that lead to this unique presentation is also proposed. In addition, the importance of therapy and its implications in TM joint ankylosis are briefly discussed.

2. Case report

An 8 year-old boy, of moderate build and nourishment, accompanied by his father, presented to the department of oral/maxillofacial surgery with reduced mouth opening. Further questioning revealed that two years earlier the boy allegedly met with a Road traffic accident (RTA) – the victim fell flat on his face, chin first, after being hit on the head, while traveling home in an

* Corresponding author.
E-mail address: drranjitkumar_omfs@yahoo.co.in (R.K. P.).

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Fig. 1. Pre operative Clinical view showing reduced mouth opening.

Fig. 2. Pre op OPT showing radio opaque projection in the sigmoid notch (Red arrow) and TM Joint space (Yellow arrow).

auto rickshaw (a public transport vehicle commonly used in India). At the time, he sustained lacerations to his forehead and chin. A little later, the boy developed mild swelling in the right preauricular region, which eventually resolved without any form of intervention. No history of loss of consciousness or bleeding from the ear or nose was reported. There were no other major injuries associated. His medical history was unremarkable. Primary care constituted wound debridement and closure of the forehead laceration at a local primary health centre. As time went by, the boy's father began noticing a progressive reduction in his son's ability to open his mouth (Fig. 1).

Clinically, the patient appeared to have limited mouth-opening – his maximal interincisal distance measured 15 mm, and the chin was mildly retruded. There were extensive scars noted on the forehead and chin. Conventional imaging included an orthopantomogram (OPT) that revealed deformed condylar head on the right side and shortened condyle on the left side which is outside the glenoid fossa. A unique, radiopaque bone-like projection (Red arrow) situated in the right sigmoid notch between the condyle and coronoid process was also observed (Fig. 2).

For further elucidation, and owing to considerable distortion in regional osseous anatomy, computed tomography (CT) with 3D

Fig. 3. Pre op 3D CT scan – Lateral/oblique view showing relationship of right condyle and deformed condyle to TMJ and Zygomatic arch.

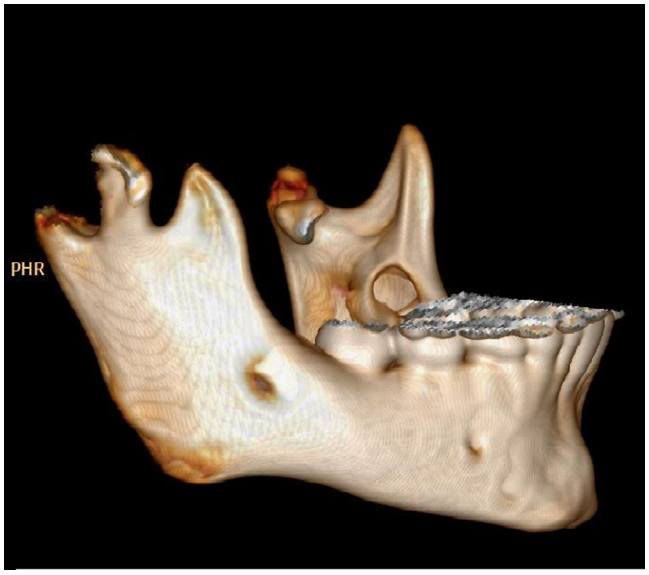

Fig. 4. Pre op 3D CT scan of mandible.

reconstruction was advised. The 156-slice scan revealed an osseous mass fused to the sigmoid notch between the condyle and coronoid process on the right side. Bilaterally, the condyles appeared to be deformed and shortened, reminiscent of an old fracture (Figs. 3 and 4) Axial views survey revealed an osseous mass located just medial to the zygomatic arch (Fig. 5). 3D reconstruction view of the mandible (Fig. 4) shows a shortened, deformed and remodeled condyles on both the sides. There is also fractured anteriorly dislocated condylar stump into the sigmoid notch on the right side. There is also an evidence of an osseous mass on the left side suggestive of a medially displaced fractured condyle. Taken together, a final diagnosis of post-traumatic, pseudo-ankylosis of the TM joint was made, for which surgery was planned.