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Bilateral TMJ Dislocation in a 23-month-old Infant: A Case Report

Abstract: Dislocation of the temporomandibular joint (TMJ) is rare in children. We present the second youngest case reported. Diagnosis was delayed owing to failure to recognize important clinical signs. We outline how this problem can be recognized and treated, and propose radiographic confirmation of the clinical diagnosis which is not necessary if there is no history of direct mandibular trauma. Two new clinical signs are demonstrated.

Clinical Relevance: TMJ dislocation is of relevance to all dental professionals because it can occur in the dental chair and because dental professionals are often called upon to manage this condition.

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Case report

A previously healthy 23-month-old female infant was transferred to our care from the paediatric department. Two days previously her mother had taken her to the emergency department because she had struck her forehead on furniture and subsequently vomited three times. She was seen by the paediatric duty registrar who established that she had not suffered a significant head injury. She was apyrexial and her vital signs were normal. Bilateral pre-auricular swellings were noted and she was discharged

with the provisional diagnosis of mumps.

Her mother returned her to the emergency department two days later as the child was still unable to close her mouth was drooling and unable to swallow. The duty paediatrician noted the same bilateral pre-auricular swellings which had previously been ascribed to mumps but this time also noticed a protruding mandible.

On examination, the infant was clearly tired and distressed. She appeared mildly dehydrated. She was unable to occlude her teeth, was drooling and had to purse her lips to bring them together in order to close her mouth and swallow (Figure 1). Interestingly, when her comforter dummy was in use this sign was not noticeable (Figure 2). Bilateral, hard, pre-auricular swellings were noted. These, however, were not parotid swellings as had been previously assumed but the anteriorly-displaced lateral aspects of the condylar eminences. The clinical signs clearly pointed towards a diagnosis of bilateral TMJ dislocation as

a result of forceful vomiting.

Manual reduction was unsuccessful whilst the child was awake in the clinic but was achieved under a brief general anaesthetic. Satisfactory reduction was confirmed clinically by a return of the child's normal dental occlusion and lower jaw mobility.

Discussion

The TMJ is a synovial joint capable of rotational and gliding movements. Dislocation is a displacement of the mandibular condyle out of the glenoid fossa and over the articular eminence, preventing spontaneous reduction.¹ In this position, the masticatory muscles go into spasm and prevent simple reduction, especially when the dislocation is not reduced immediately.² Irreducible dislocation does not normally occur in children as the articular eminence is not sufficiently developed until the end of the first decade.³

The two youngest previously reported cases were 10 and 24 months,

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Figure 1. With a dislocated TMJ the child cannot close her mouth and has to purse her lips to achieve an oral seal. This is an important sign of TMJ dislocation.



Figure 2. With the dummy in, this pursing the lips sign is difficult to see and this may explain why there was a delay in correct diagnosis.

article described only the inability to close the mouth and drooling,⁴ whilst Atherton and Peckitt describe an anterior open bite, a protruding chin, drooling and an inability to swallow.⁵ In both cases, radiographic imaging was used to confirm the clinical diagnosis.

We feel the clinical diagnosis can be achieved by careful examination alone. The following signs should be sought:

- An inability to occlude teeth;
- Pursed lip (especially important in children, and not previously described);
- Drooling;
- Protruding lower jaw;
- Pre-auricular bony hard swelling (again, not previously described).

We suspect that the cause of the delay in diagnosis in this case was as a result of the child's comforter dummy not being removed and therefore the first four of these signs were not appreciated, leaving only the subtle pre-auricular swellings, which were misinterpreted as mumps. The pre-auricular swelling is an important sign not previously described and due to displacement of the condylar head anterior to the articular eminences, where the bulging is readily apparent.

Management of TMJ dislocation

If there is no history of direct trauma to the lower jaw it is not necessary to obtain radiographs to achieve a diagnosis. However, if there has been trauma to the mandible, radiographs would be indicated to exclude condylar fractures which may present with an anterior open bite, similar to a dislocation. A delay in reduction is more likely to necessitate sedation, or even general anaesthesia, as muscle spasm becomes more severe with time, as in this case.

The patient should be sat upright in a chair with head support. The operator should stand in front of the patient facing him/her. The operator's thumbs are placed on the most posterior molar occlusal surfaces (or the adjacent external oblique ridges of the mandible, which are readily palpable just lateral to the molar teeth)

as far back as possible, whilst the index fingers are placed beneath the chin as far forward as possible.⁶ Steady downward force is applied through the thumbs as equal upward force is applied through the index fingers, allowing disimpaction of the condyles away from the articular eminences, so permitting reduction. It should be noted several minutes of sustained pressure may be required to overcome the masticatory muscle spasm. Usually, the condyles can be 'walked' back into their anatomical position one side at a time. If this manoeuvre is performed quickly following dislocation, reduction can usually be achieved easily without recourse to sedation or anaesthesia.

Conclusions

TMJ dislocation is rare in young children but the diagnosis should be considered, and the signs outlined in this article should be looked for, in children who have had forceful vomiting. The management is simple if carried out promptly but may require a general anaesthetic if there has been a delay in treatment.

References

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respectively.^{4,5} Both of these cases described bilateral TMJ dislocation in children secondary to vomiting. In terms of clinical signs, Whiteman and Pradel's