# Recurrent TMJ Dislocation in a Child: A Case Report and Discussion

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Temporomandibular joint (TMJ) dislocation demonstrate a displacement of the mandibular condyle from it functional position within the glenoid fossa and articular eminence. TMJ dislocation is an acute episode can be transformed into chronic dislocation after multiple repeated episodes. Oral surgeon is frequently called for the management of recurrent TMJ dislocation in adults. In pediatric population, TMJ dislocation sometimes caused by trauma or other than trauma related to wide opening of the mouth during vomiting, yawning and dental procedures considerably under general anesthesia.

A 3-year-old baby girl came to Emergency department with a complaint of open mouth for the last 6 hours. Initial examination was carried out and patient was sent for CT-Scan. CT-Scan reported an asymmetric soft tissue density mass in retropharyngeal area at the level of C1 and C2, showing more bulk on right side. Some subtle radiolucencies are also identified within the mass.The possibility of a low-density foreign body or retropharyngeal abscess could not be entirely excluded. A quick examination under anesthesia (EUA)was performed to relieve the patient from the abscess/growth. During EUA, they did not find any growth or collection or pus. The patient was sent to oral and maxillofacial surgeon, on initial examination and previous CT Scan findings, TMJ dislocation was diagnosed. In order to completely examine the patient, reduction of the jaw was attempted on chair side. This was achieved by digital manipulation with little effort and the baby's jaw was secured with Barton's bandage to prevent repeated dislocation.She continued tablet beclofen for 6 months as prescribed by the paediatrician.

**KEYWORDS:** Temporomandibular Joint (TMJ), Recurrent dislocation, paediatric

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## INTRODUCTION

Temporomandibular joint (TMJ) dislocation indicates a non-self-limiting displacement of the mandibular condyle, outward from it functional position within the glenoid fossa and posterior slop of the articular eminence. It's an acute phenomenon which can transform into chronic condition after multiple recurrence episodes.[1] Oral surgeon is frequently called for the management of recurrent TMJ dislocation in adults. In pediatric population,TMJ dislocation sometimes caused by trauma related to wide opening of the mouth during vomiting, yawning and dental procedures considerably under general anesthesia.[1,2] Recurrent TMJ dislocationsin adults have been reported and are common findings in practice. We are presenting our case as in children this is extremely rare except for few reported cases.

Management of TMJ dislocation in adults are well described; in acute condition, manual technique use for reduction.[1,3] In recurrent TMJ dislocations, surgery is recommended commonlyeminectomy described by Myraugh in 1951 is used for correction. Other procedures include capsule tightening, Dautery procedure, intra articular injections and many others.[4] In pediatric patients these surgical procedures are not warranted generally owing to small structures and risk of facial nerve injury.

We are presenting a case reported with recurrent TMJ dislocation in a 3-year-old child and discuss its management with available options.

## CASE REPORT

A 3-year-old baby girl came to emergency department of tertiary care hospital with a complaint of open mouthfor the last 6 hours. According to her mother, she had stopped eating suddenly for many hours that morning and throws all food out when someone tries to feed her. Oninitial examination, the patient looked distressed and unable to close mouth on repeated requests.At the Emergency Room (ER), doctor ENT on call was called immediately for opinion. After initial examination, CT-Scan was ordered to facilitate further diagnosis.CT-Scanreport showedan asymmetric soft

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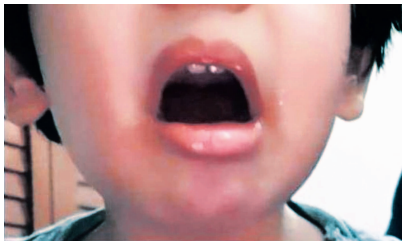

**Figure 1:** Clinical picture shows open mouth with jaw dislocation

**Figure 2:** Radiographic picture showing slide of sagittal plane of CT-Scan with dislodgment of head of condyle of mandible from glenoid fossa-base of skull.

tissue density mass in the retropharyngeal area at the level of C1 and C2, showing more bulk on right side. Some subtle radiolucencies are also identified within it.Possibility of a low-density foreign body or retropharyngeal abscess cannot be entirely excluded.A quick examination under anesthesia (EUA)was planned and performed to relieve the patient from the abcess/growth. During EUA of the patient, no subsequent finding of any growth or collection or pus was observed.Following recovery, patient still had the same problem of recurrent open mouth which caused distress and raised concern for the family due to lack of eating. The patient was then admitted to pediatric ward for medical assistancesince she was unable to eat for many hours and was dehydrated.

On a much detailed history, parents revealedthat baby girl along with her mother were visiting Pakistan on vacations and the very first episode of open jaw occurred after one week of arrival and was resolved itself which lasted 2-3 hours. A month later, a more pronounced episode occurred which did not resolve itself and they had to report to ER. The patient was sent to oral and maxillofacial surgeon, on initial examination and previous CT Scan findings, TMJ dislocation was diagnosed. In order to completely examine the patient, reduction of the jaw was attempted on chair side. The relocation of jaw was achieved by digital manipulation with little force and secured with Barton's bandage to prevent from subsequent jaw dislocation.Family was counseled and explained method of reducing jaw and securing with Barton's bandage if happens at home. After 24 hours, patient returned to ER with the same complaint. Although jaw dislocation was reduced again by applying minimal digital pressure and effort.Since patient was unable to eat, she was exhausted, distressed and admitted again under pediatric care for rehydration and medicalsupport. She was given tablet baclofen 2mg given 12 hourly, diazepam 5mg PR, paracetamol 250mg suppository. Patient was discharged after two days on oral medicines, with advice on cervical collar and bandage. The patient had two similar episodeswith the same management. Patient's family was counseledby nutritionist and psychiatrist.

All jaw dislocationsoccurred in Pakistan and resulted in admission three times. Following return to their country, no further episodesoccurred uptill the last follow up which was last week on phone. The pediatrician had continued tablet baclofen for 6 months.Patient was followed every month for 1 year, in Pakistan follow up visit in clinic and after their return to their country follow up on phone and internet call. Patient was still in contact till the last filing of the report.

## DISCUSSION

The Temporomandibular joint is a synovial hinge-type joint, performs gliding and rotational movements.[5] Dislocation refers to dislodgment of condylar part of the mandible out of glenoid fossa-base of the skull and over the articular eminence process, prevents to come in its normal position spontaneously.[5,6] Simple reduction after dislocation is difficult if not manage immediately, this is due to masticatory muscles spasm.[1,7] In children, irreversible dislocation does not occur because articular eminence is rudimentary until the end of first decade of childhood.[5,8]

If there was a history of trauma to the mandible, radiographs would be advised to exclude the possibility of condylar fractures resulting inan anterior open bite, this condition is similar to a mandibular jaw dislocation.In contrast, jaw dislocation must be addressed immediately, any delay in reduction of jaw dislocationwill more likely necessitate sedation or even general anesthesia for the reduction due to muscle fatigue and spasm as occurred in this case.The technique for the reduction of jaw dislocation is that the patient should be placed upright on a chair with head support.The operator standsin front, using both thumbs of handsplaced on last molar tooth of jaw. Force then should be applied in downward direction followed by backward and upward pull to achieve jaw reduction and occlude the teeth.Manual reduction, Bartons bandage, IMF screws with elastics, orthodontic brackets with elastics may be used on an outpatient setting. More invasive surgical procedures like Dautery procedure, intra-articular injections (Botox, Triamcinolone, Autologous blood),[11] eminectomy, use of hardware to augment the articular eminence.The potential risks associated with the surgical procedures are infection, failure of the procedure, plate or screw fracture, temporary or permanent facial nerve paralysis, multiple operationsand strong follow-up is required to prevent

osteoarthrosis. In a growing child, there are risks specified to growth, growth center and possible osteoarthrosis. The reported cases in the literature related to recurrent dislocations in pediatric are scarce. In 2000 Whiteman PJ et al, reported bilateral temporomandibular joint dislocation in 10-month-old infant after vomiting[9] confirming on radiograph manually reduced the mandible by applying gentle pressure downward at the posterior and upward at the chin. In 2009 Cascarini L, reportedbilateral temporomandibular joint dislocation in 23-month-old infant after three episodes of vomiting, manual reduction was unsuccessful whilst the child was awake in the clinic but was achieved under general anesthesia.[5] In 2015 Khilji MF et al, reported bilateral temporomandibular joint dislocation of a 26 months old child with no known familial or genetic disorder. Reduction was achieved by manual digital manipulation under procedural sedation. The child was able to close her mouth and was discharged home on oral paracetamol and chin to vertex bandage to restrict wide jaw opening and parental counseling.[12]

In 2017 Painatt JM et al, reported bilateral temporomandibular joint dislocation in 18-month-old infant after child's mother forcefully fed the child led to this condition, manual reduction was achieved under sedation and Barton's bandage applied to prevent recurrent dislocation.[10] In 2018 Sicard L et al, reported chronic bilateral non traumatic temporomandibular joint dislocation in 26 months old and a 19 months old child in this management of dislocation was dealt by different means such as manual digital manipulationunder general anesthesia, chin-to-vertex bandage utilized in other episodes and orthodontic headgear utilization for securing joint under sedation also another maneuver to overcome recurrent TMJ dislocation.[1]

Clinicians have used different options to treat this distressing situation by using Barton's bandage, use of headcap tied to gauze, use of soft paediatric collars to keep jaws closed.

## CONCLUSION

This case emphasizes that recurrent dislocation of temporomandibular joint (TMJ) is a possibility in infants and children, although it is rare.Careful history and examination will reveal a possible cause for the dislocation. Conservative management, patient and family education and psychiatric evaluation will help in this distressing situation for the child and family.

## CONFLICT OF INTEREST

None to declare

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