



# A Jaw-Dropper!

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## Patient presentation

- A 23-year-old man presents with his mouth stuck open (Figures 1 & 2).
- He feels severe pain anterior to the tragus bilaterally.
- Pain occurred suddenly, as he laughed at a joke.
- Patient is in significant pain and prefers to communicate via writing due to the pain. (You can't understand what he's saying anyway!)



Figures 1 & 2. Patient presents unable to close mouth, with palpable masseter spasm.

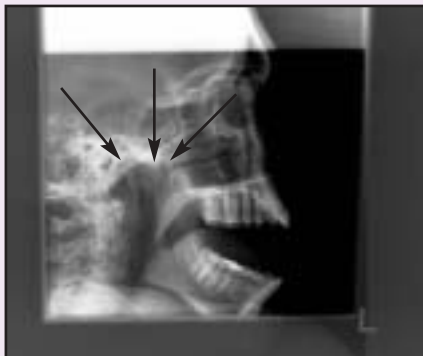


Figure 3. X-ray demonstrating the dislocated mandibular condyle sitting anterior to the articular eminence. Arrows, from left to right: articular fossa; articular eminence; mandibular condyle lying anterior to the articular eminence.

## Questions & Answers

### 1. *What the...?*

This is a typical presentation of anterior temporomandibular joint dislocation (ATMJD). This usually occurs after extreme mouth opening, such as yawning or taking a big bite from an apple.

Recurrent dislocations are common in patients with lax ligamentous tissue, such as Marfan's or Ehlers-Danlos syndromes.

ATMJD is characterized by the displacement of the mandibular condyle from the articular fossa anteriorly over the articular eminence. It is the most common non-traumatic jaw dislocation. The dislocation is followed immediately by severe masseter spasm, which makes reduction difficult.

### 2. *How do I confirm the diagnosis?*

ATMJD is a clinical diagnosis and is not difficult to make. The patient is unable to clench his teeth together and the empty articular cup can be felt as a palpable depression in front of the tragus. Unilateral dislocation (which is rare) will result in deviation of the chin away from the dislocated side.

Superior, posterior and lateral dislocations do occur, but usually in the setting of significant trauma. X-rays are unnecessary in the absence of trauma, but would show an empty joint space with the mandibular condyle sitting anterior to the articular eminence (Figure 3).

### 3. *How do I fix it?*

Reduction is achieved by pushing the mandible down and backward. For this to be possible, adequate muscle relaxation is essential. This is best achieved under intravenous procedural sedation and analgesia, but reduction under local anesthetic injected into the empty joint cavity (2 mL of 2% xylocaine) has been described.

Position yourself in front and to the side of the patient, who is sitting up with back and head supported. Ideally, your horizontal forearms should be in line with, or above the patient's jaw, so if the patient is on a bed, you may need to stand on something (Figure 4).

### Back to our patient...



Figure 4. Reducing dislocation with thumbs pushing downward onto the lower molars.



Figure 5. Normal occlusion of the teeth confirms reduction.


Wrap the thumbs with gauze to prevent being bitten if the jaw snaps shut after reduction. Place your thumbs inside the mouth as far back along the lower molars as possible (on the occlusive surface), with your fingers along the inferior border of the mandible, (index finger at the angle), in opposition to the thumbs.

Grasping firmly, with steady, firm pressure, push downward on the molars and then backward. If this doesn't work, opening the jaw may disimpact the condyle from the anterior eminence; then (as you push down and back), closing the jaw may help the condyle slide back. Often, the reduction is achieved one side at a time.

Reduction can be demonstrated by symptomatic improvement and normal jaw movement (Figure 5). Difficulty with reduction and the chance of the jaw snapping back onto your thumbs are both significantly decreased by ensuring proper muscle relaxation through adequate sedation and analgesia.

## 4. What now?

Following reduction, the patient should be warned to observe a soft diet and not to open his jaw more than 2 cm for one to two weeks. A good idea is to support the mandible with a hand while yawning. Pain is usually adequately managed with non-steroidal anti-inflammatories.

Failed reductions, chronically unreduced or recurrent ATMJDs, or those associated with fractures, should be referred. 

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*This department covers selected points to avoid pitfalls and improve patient care by family physicians in the ED. Submissions and feedback can be sent to [diagnosis@sta.ca](mailto:diagnosis@sta.ca).*