

compression. **Secondary, or symptomatic, trigeminal neuralgia** is due to tumor, multiple sclerosis, or other structural abnormalities.

The history is key for diagnosis. Pain is a severe, shocking or stabbing, and brief, lasting seconds to minutes. Complete resolution occurs between episodes. Pain is clearly in the distribution of cranial nerve V. Classically, the pain is unilateral, although it can be bilateral. Triggers include light touch, chewing, or a light breeze. Pain can be accompanied by facial spasms. Physical exam is unremarkable.

Treatment is most often medical, but severe cases may require surgical intervention. Carbamazepine, started at 100 milligrams PO twice a day and then increased in dosage as needed, is an effective treatment. Baclofen has also been shown to be successful.³⁹ Patients with trigeminal neuralgia may present to the ED because symptoms are of recent onset or recurrent and should be started or restarted on carbamazepine. Pain control is rarely an issue because the paroxysms are so brief. Refer patients to a neurologist.

BELL'S PALSY

Bell's palsy is the most common cause of unilateral facial paralysis. The cause, however, is not clear. A leading theory is that as the facial nerve exits the temporal bone, edema and ischemia result in compression of the nerve. Inflammatory, demyelinating, or compressive processes have all been suggested, including infections (herpes simplex virus, herpes zoster, Lyme disease, syphilis, Epstein-Barr virus, cytomegalovirus, human immunodeficiency virus, mycoplasma), microvascular disease (diabetes and hypertension), and medications, including chemotherapeutics.⁴⁰

Symptoms of Bell's palsy include acute onset of unilateral upper and lower facial paralysis, posterior auricular pain, decreased tearing, hyperacusis (oversensitivity to certain frequency and volumes), and otalgia. Some of these symptoms may develop prior to the classic facial paralysis. Onset is typically sudden, with a peak of symptoms in 48 hours.⁴⁰

Diagnosis is confirmed by thorough history and physical exam. Examination reveals **weakness and/or paralysis of both the upper and lower portion of the face on the affected side**. Flattening of the forehead and nasolabial folds on the affected side is present. Careful neurologic exam is useful in ruling out other conditions, such as stroke. In addition, examine the ear to ascertain presence of cranial herpes zoster, which along with stroke and Guillain-Barré syndrome accounts for >85% of misdiagnoses.⁴¹ Laboratory studies are not needed.

There is much controversy surrounding the treatment for Bell's palsy. Goals of emergency care include increasing the chances of recovery of facial nerve function and protection of the eye. The American Academy of Neurology guidelines state that steroids are highly likely to be effective and increase the likelihood of recovery.⁴² When initiated within the first 72 hours of symptom onset, steroids improve chances of full recovery. The recommended dosing is 1 milligram/kg up to 60 milligrams/d for 6 days, followed by a 10-day taper. Use of antivirals, such as acyclovir or valacyclovir, is controversial. According to the American Academy of Neurology's 2012 guidelines, benefits from antivirals have not been established and are thought to be modest at best.⁴¹ A variety of other therapies including physical therapy, acupuncture, and surgical decompression have also been used with variable success. Cessation of the offending agent is indicated if the medications or chemotherapy is implicated. Apply ocular lubricants to protect against corneal abrasions, and it may be necessary to tape the patient's eyelid, especially during sleep.

MANDIBLE DISLOCATION

The mandible can be dislocated in an anterior, posterior, lateral, or superior direction. **Anterior dislocation is most common and occurs when the mandibular condyle is forced in front of the articular eminence.** Muscular spasm then traps the mandible in anterior dislocation, and the mandible is elevated before retraction. Factors that predispose patients to symptomatic anterior dislocation include a shallow glenoid fossa, increased muscle tone (such as during a seizure), and a loss of joint capsule tone from previous trauma. Spasm of the temporalis and lateral pterygoid muscles tends to prevent reduction once dislocation has occurred. Dislocations are usually bilateral but can be unilateral.³³ Posterior dislocations are rare. They follow a blow that may or may not

break the condylar neck. In posterior dislocation, the mandibular condyle is thrust backward against the mastoid, and the condylar head may prolapse into the external auditory canal.³³ Lateral dislocations are often associated with mandibular fracture. With a lateral dislocation, the condylar head is forced laterally and then superiorly into the temporal space. Superior dislocations occur from a blow to the partially open mouth that forces the condylar head upward. Associated injuries include cerebral contusions, facial nerve palsy, and deafness.

Acute jaw dislocation causes severe pain, difficulty in speaking or swallowing, or malocclusion after a blow to the jaw or a seizure or, sometimes, spontaneously. There may be loose or missing teeth and areas of sensory deficit at the chin or mouth. With anterior dislocation, pain is localized anterior to the tragus. Symptoms may develop after extreme mouth opening from laughing, yawning, vomiting, taking a large bite, or trauma, or iatrogenically during dental extraction, general anesthesia, and tonsillectomy.³³ With anterior dislocations, the lower jaw is prominent appearing, and there is visible and palpable preauricular depression from the displacement of the mandibular condyle. There also will be difficulty with jaw movement. If the dislocation is unilateral, there is deviation of the jaw away from the dislocation. **When a posterior dislocation is considered, examine the external auditory canal.** Confirm that hearing is at baseline. With lateral dislocations, the condylar head is palpable in the temporal space, and there are always signs of jaw fracture (e.g., malocclusion). **Posterior, lateral, or superior dislocations result from severe trauma.** The differential diagnosis includes mandibular fracture, traumatic hemarthrosis, acute closed locking of the temporomandibular joint meniscus, and temporomandibular joint dysfunction.³³

In the cooperative patient with a **spontaneous atraumatic anterior dislocation**, the diagnosis is clinical. In other dislocations, including any traumatic dislocation, obtain radiographs. The panoramic (Panorex) view usually demonstrates the pathology and excludes other mandibular injury. In patients with more serious trauma, where there may be a superior dislocation or intracranial injury, CT will provide more information.

Perform reduction in the ED for closed anterior dislocations without fracture.³³ A short-acting IV muscle relaxant (e.g., midazolam) may help to decrease muscle spasm. Appropriate airway and hemodynamic monitoring is required. Procedural sedation has been used successfully.⁴³ Alternatively, local anesthetic can be placed into the joint space. Using aseptic technique, place a 21-gauge needle into the preauricular depression just anterior to the tragus and inject 2 mL of 2% lidocaine⁴⁴ (**Figure 243-5**).

REDUCTION OF ANTERIOR TEMPOROMANDIBULAR JOINT DISLOCATION

The most commonly used technique requires the patient to be firmly seated with the head against the wall or chair back, positioned so that the examiner's flexed elbow is at the level of the patient's mandible. Apply a

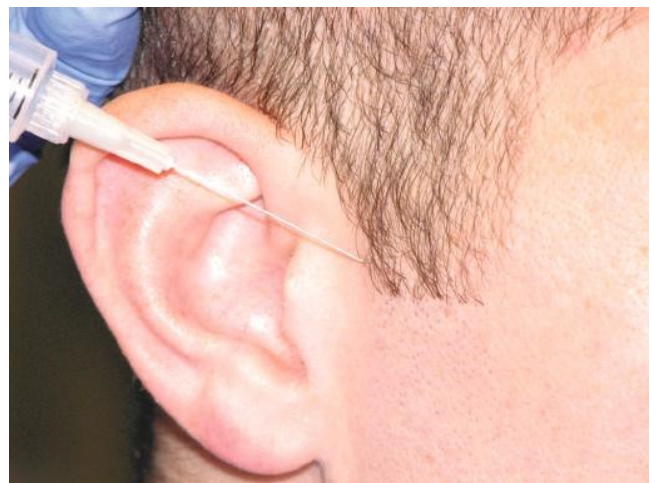


FIGURE 243-5. Site for injection of local anesthesia for reduction of dislocated mandible. Place a 21-gauge needle into the preauricular depression just anterior to the tragus and inject 2 mL of 2% lidocaine.



FIGURE 243-6. Reduction of dislocated mandible technique in a seated patient. The thumbs are placed over the molars, and pressure is applied downward and backward.

few layers of gauze over gloved thumbs for protection, in case the mandible snaps closed after reduction.³³

Facing the patient, place gloved thumbs in the patient's mouth, over the occlusal surfaces of the mandibular molars, as far back as possible. Curve your fingers beneath the angle and body of the mandible. Using the thumbs, **apply pressure downward and backward (toward the patient)**. Slightly opening the jaw may help disengage the condyle from the anterior eminence (**Figure 243-6**). When the dislocation is bilateral, it may be easier to relocate one side at a time.

In the second technique, with the patient recumbent and supine, stand at the head of the bed, place the thumbs on the molars, and apply downward and backward pressure (toward the stretcher) (**Figure 243-7**).³³

In addition to the above common methods, other approaches include the ipsilateral, in which the thumb is externally used to apply downward pressure on the displaced condyle; the wrist pivot method, in which the healthcare provider's thumbs are placed on the mentum, applying



FIGURE 243-7. Alternate mandibular reduction technique, with the examiner behind and above the reclined patient. Place the thumbs on the molars and apply downward and backward pressure (toward the stretcher).



FIGURE 243-8. Wrist pivot method for mandibular reduction. The operator's thumbs are placed on the mentum, applying upward force, while the fingers apply downward force on the body of the mandible.

upward force, while the fingers apply downward force on the body of the mandible (**Figure 243-8**); and the gag reflex approach. In the gag reflex method, the provider stimulates the patient's soft palate with a tongue blade or dental mirror, thereby producing muscle relaxation and descent of the mandible, resulting in relocation of the condyle.³³

After successful reduction, the patient should be able to close his or her mouth immediately. Postreduction radiographs usually are not needed unless the procedure was difficult or traumatic or there is significant postreduction pain. Complications from the reduction itself are unusual but can include iatrogenic fracture or avulsion of the articular cartilage.

Dislocations that are open, superior, associated with fracture, have any nerve injury, or are irreducible by closed technique should be referred urgently to an otolaryngologist or maxillofacial surgeon.

Following successful reduction of an acute dislocation, patients may be discharged home, placed on a soft diet, and cautioned against opening their mouths >2 cm for the following 2 weeks.³³ Advise patients to support the mandible with a hand when they yawn. Nonsteroidal analgesics may help the initial discomfort. Elective referral to an oral maxillofacial surgeon is recommended. In severe cases, intermaxillary fixation may be required to control jaw motion during healing. Chronic dislocations may require operative intervention.

REFERENCES

The complete reference list is available online at www.TintinalliEM.com.

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Nose and Sinuses

Henderson D. McGinnis

EPISTAXIS

EPIDEMIOLOGY

Epistaxis occurs most frequently in children under 10 years old and in those over 70 years old.¹ Local causes of epistaxis include digital trauma, a deviated septum, dry air exposure, rhinosinusitis, neoplasia, or chemical