

EM CASE OF THE WEEK.

BROWARD HEALTH MEDICAL CENTER
DEPARTMENT OF EMERGENCY MEDICINE



Care Warriors

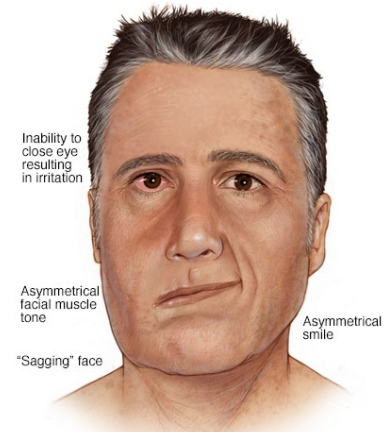
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Bell's Palsy

A 70-year-old male with a history of Type 2 diabetes presents to the ED after a fall one hour ago. His neighbor called EMS after witnessing the fall and said that the patient had drooping of the right side of his face. The patient denies any loss of consciousness or head trauma. Vital signs are unremarkable, the patient is alert but slow to respond to questions and is difficult to understand. He states that his face has been paralyzed for the past 2 days. On physical exam, testing of cranial nerves shows right sided facial paralysis including the forehead. No other focal neurologic deficits are noted. Some abrasions are noted on the right anterior tibia. NIH Stroke Score is 4 due to unilateral paralysis and minor dysarthria. What is the most appropriate next step?

- A. Stat non-contrast Head CT
- B. Call to consult Neurology
- C. Get IV access and administer tPA
- D. Prescribe Prednisone 60 mg QD for 5 days
- E. Check on labs (CBC, CMP, BG) and discharge if normal



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Illustration of Bell's palsy, an acute palsy of the facial nerve.

This illustration demonstrates the classic presentation of Bell's Palsy: an asymmetrical smile, sagging face due to unilaterally reduced muscle tone, and unilateral scleral injection due to the inability to close the affected eye.

EM Case of the Week is a weekly "pop quiz" for ED staff.

The goal is to educate all ED personnel by sharing common pearls and pitfalls involving the care of ED patients. We intend on providing better patient care through better education for our nurses and staff.

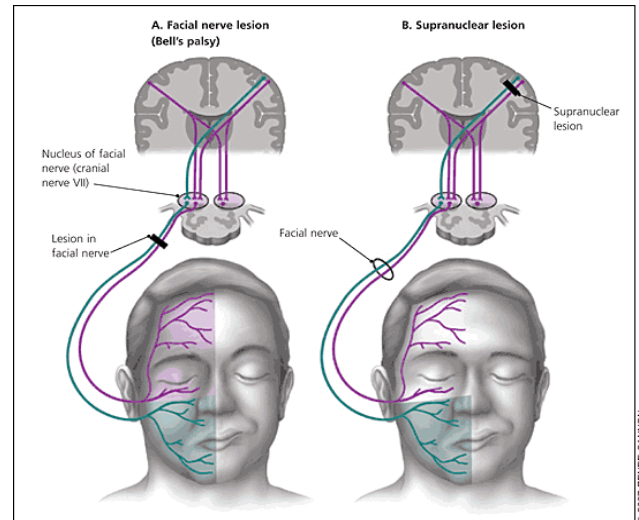
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The correct answer is D, Prednisone 60 mg a day for 5 days.

This patient is not suffering a brain attack, but rather is presenting with Bell's Palsy. The onset of his facial paralysis 2 days before presenting to the ER is not suggestive of a brain attack, neither are his normal vital signs. One would expect to see marked hypertension in a patient with cerebral ischemia or hemorrhage⁽¹⁾. The treatment of choice for Bell's Palsy is a short course of oral corticosteroids, usually Prednisone. Antivirals like Acyclovir and Valacyclovir may also be used in refractory cases due to HSV-1 infection but these are often unnecessary and not cost-effective.⁽²⁾



(via <https://www.aafp.org/afp/2007/1001/p997.html>)

Discussion

A high level of suspicion of brain attack (stroke) should be maintained for patients who present with neurologic symptoms, especially those that are classic for a brain attack, including facial drooping, unilateral weakness and loss of sensation, and confusion⁽³⁾. However, there is significant overlap in some of the aforementioned symptoms with other neurological disorders. One such disorder is Bell's Palsy, a palsy of the peripheral fibers of the facial nerve (CN VII). Many patients may be aware of their Bell's Palsy and can convey the diagnosis during the history, lowering the level of suspicion for a brain attack. However, in the emergency medicine setting, obtaining a complete past medical history may be difficult or impossible. This can cause pre-existing neurological disorders, such as Bell's Palsy, to falsely elevate an assessment for a brain attack. Therefore, it is important to learn and identify key features that distinguish Bell's Palsy from neurological emergencies, like a brain attack or brain bleed.

Etiology

Differentiating Bell's Palsy from a brain attack begins with understanding the pathophysiology of both disorders. Bell's Palsy is caused by an insult to the secondary nerve fibers of the facial nerve (CN VII). Causes may include viral infections like Herpes simplex type 1, trauma to the side of the face, and other infections like Lyme disease or acute otitis media⁽⁴⁾. Interruption of the peripheral nerve fiber results in dysfunction across the entire distribution of the facial nerve, resulting in complete paralysis of the ipsilateral face.

Conversely, a brain attack is caused by impaired blood flow to the brain, causing ischemia and death of brain tissue in the affected area. Brain attacks can be a result of arterial blockage or hemorrhage. A brain attack causes central nerve dysfunction within the cortical region of the brain. This can result in focal deficits anywhere in the body, including the face. Supranuclear damage to the central fibers of the facial nerve will result in incomplete paralysis of the contralateral side of the face⁽¹⁾.

For a list of educational lectures, grand rounds, workshops, and didactics please visit BrowardER.com and **click** on the **"Conference"** link.

All are welcome to attend!

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Keys to Differentiating Bell's Palsy from Brain Attack

Several key features can help distinguish facial paralysis caused by Bell's Palsy from that caused by a brain attack. First, consider the timeline of symptom onset. If the patient has been experiencing facial paralysis for several days with no other symptoms, Bell's Palsy is more likely to be the cause than a brain attack. Facial paralysis due to a brain attack will reach maximum deficit within minutes, but Bell's Palsy may take hours to days to reach peak deficit. Additionally, brain attacks commonly present with symptoms and signs other than isolated facial paralysis⁽⁵⁾. A thorough neurological exam and stroke assessment should be performed in any patient experiencing facial paralysis.

Keep in mind the underlying causes of Bell's Palsy when evaluating your patient. If the patient has a history of Lyme Disease, acute otitis media, Ramsay-Hunt Syndrome, or another condition related to Bell's Palsy, a higher index of suspicion for Bell's Palsy is necessary.

During the physical exam, ask the patient to raise their eyebrows. A peripheral nerve injury will prevent the forehead from wrinkling. Conversely, a central deficit like a brain attack is less likely to affect the patient's ability to wrinkle their forehead. Testing the wrinkling of the forehead alone is not enough evidence to rule out a stroke, a thorough neurological exam is still necessary to look for any other focal deficits⁽⁵⁾.

Finally, if the patient is at high enough risk for a brain attack and it cannot be ruled out during the history and physical exam, some clinical judgement must be applied. Due to the high mortality and adverse outcomes from delayed treatment of brain attacks, it is worthwhile to obtain a CT scan of the head to search for signs of infarction or hemorrhage.

Take Home Points

- Under certain circumstances, Bell's Palsy may present similarly to a brain attack.
- An adequate history and physical exam can help differentiate Bell's Palsy and a brain attack.
 - A patient with Bell's Palsy will often be unable to raise their eyebrows, while a patient with a brain attack will often be able to raise them.
 - While a brain attack presents with rapid onset of symptoms, Bell's Palsy has a slower onset, up to several days.
- Underlying Bell's Palsy can complicate assessment of a patient with a brain attack.
- First-line treatment of Bell's Palsy is a short course of oral corticosteroids. Antiviral drugs may be added on in certain cases of HSV-1 palsy.



This month's case was written by Collin Brown. Collin is a 2nd year Physician Assistant student from NSU. He did his emergency medicine rotation at BHMC in September 2019. Collin plans on pursuing a career in Orthopedics after graduation.

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