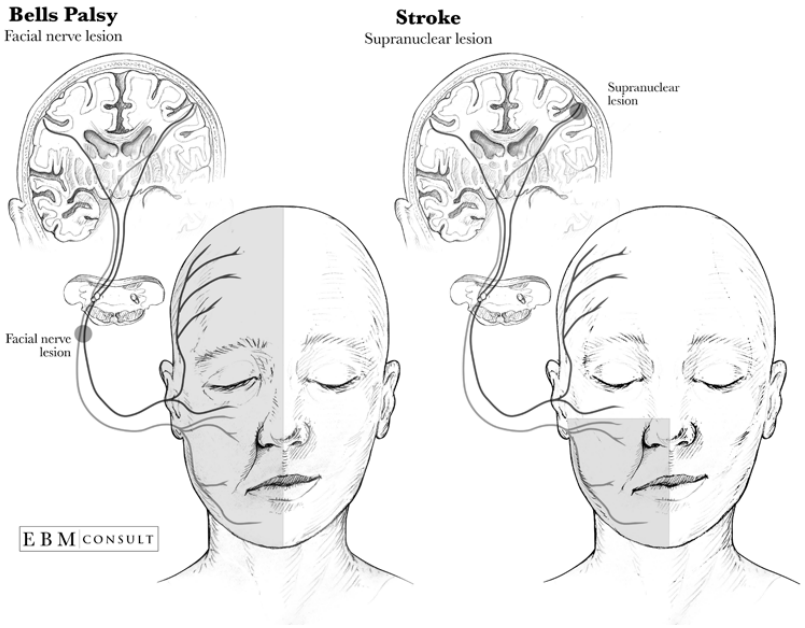
Bells Palsy vs. Stroke



Main Point:
If you have a patient come in complaining of new or acute onset of unilateral facial paralysis without any other sensory or motor deficits (i.e., no upper or lower extremity weakness) the next thing you want to do is have them raise their eyebrows.

- If they cannot raise their eyebrows and cannot move the lower portion of their face they have Bell's palsy and should be given steroids +/- antivirals.
- If they can move their forehead then you have to be concerned for a stroke and should get imaging and further consideration of treatment (depending on time of presentation and cause).

Bells Palsy:
Bell's palsy (also called idiopathic facial paralysis) is the most common cause of unilateral facial paralysis. It has the following features:

- Acute onset of unilateral upper AND lower facial paralysis
- Flattening of the forehead and inability to raise eyebrows on affected side
- On smiling the face lateralizes to the opposite (normal side)
- Hyperacusis
- Changes in taste
- Impaired eyelid closure

The above symptoms occur as a result of the injury, swelling, and/or ischemia of the facial nerve (CN VII) as a result of compression as it passes through the facial canal. This is most commonly caused by viral infections with the most common being (herpes simplex virus). This is a peripheral nerve effect whereas a ischemic stroke is more likely to be central and involving the cerebral cortex. Therefore, the location of the lesion is important in differentiating the two clinical scenarios whose treatments are drastically different. Patients with Bell's palsy should be given steroids within72 hours of onset +/- antivirals, and +/- eye lubricant to prevent corneal abrasions or ulcers.

Stroke:
A cerebrovascular accident (CVA) can either be ischemic or hemorrhagic and most commonly involves the cerebral cortex. In the context of differentiating a stroke from Bell's palsy it is important to recognize that while an injury (or supranuclear lesion) has occurred to the cerebral cortex the facial nerve to the forehead has two sources of innervation and can still receive that other source of innervation from the contralateral side of the brain thereby allowing the patient to still raise their eyebrow or wrinkle their forehead.

References:

- Baugh RF et al. Clinical Practice Guidelines: Bell's Palsy Executive Summary. Otolaryngol Head Neck Surg 2013;149(5):656-63.
- Gronseth GS et al. Evidenced-based guidelines update: steroids and antivirals for Bell palsy: report of the Guideline Development Subcommittee of the American Academy of Neurology. Neurology 2012;79(22):2209-13.