Bilateral Bell's Palsy in a Pediatric Patient

OUR LADY OF THE LAKE CHILDREN'S HOSPITAL

Natalie Bush, MS3[1], Cydney Fondel, DO[2], Bruno Silva, DO[2], Kasey Renfrew, DO[2] & Emily Klepper, MD[3]

1. LSU-NO School of Medicine 2. OLOL Children's Hospital, Pediatric Residency Program 3. Pediatric Hospitalists of Louisiana

Introduction

- Bell's palsy (BP) is a sudden facial weakness or paralysis due to inflammation and dysfunction of the facial nerve.
- Bilateral facial nerve palsy (FNP) represents less than 2% of all cases of facial nerve palsies with an incidence of 1 per 5,000,000 population. <20% of bilateral FNPs are attributable to BP.
- Most patients with bilateral FNP have underlying medical conditions such as neurologic, neoplastic, traumatic, or metabolic disorders.
- The expansive and potentially life-threatening differential diagnosis requires a broad laboratory workup and prompt radiological evaluation.

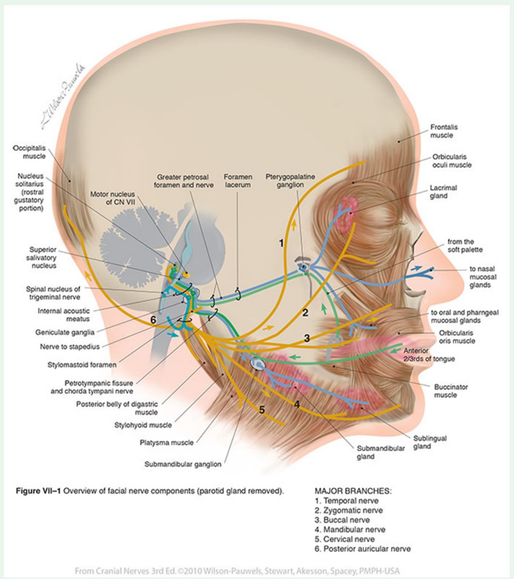

Figure 1. Pathway of CNVII and its branches.

Case Presentation

- A 16-year-old male presented to the ED with bilateral facial paralysis. The patient reported a fever 2-3 days prior, during which he began to have difficulty with facial movements.
- He denied numbness, loss of sensation, or facial pain except when talking. He denied recent trauma, travel, allergen exposure, insect bites, or ill contacts. He denied history of STIs or exposure.
- In the ED, he was afebrile with stable vital signs. Minimal movement of the right eyebrow was noted with no movement of the left eyebrow. The patient was able to close his eyes but not against resistance. When asked to smile, no facial movement was noted. Facial sensation, jaw and tongue muscles, extra-ocular eye movements, and hearing were all intact.
- Once admitted, he received an extensive infectious workup including lab work, imaging, and lumbar puncture (LP). He was diagnosed with moderate to severe bilateral Bell's palsy at the nerve distal to the geniculate ganglion branch to the stapedius, secondary to prior or repeated EBV exposure or infection.
- Due to considerable paralysis, he was treated with two doses of 1-gram IV solumedrol and artificial tears. He was discharged 4 days later.
- One month later, he reported to neurology follow-up with return of motor function to the facial nerve. He did report facial neuralgia and was started on gabapentin 300 mg twice daily and encouraged to increase facial motor exercises.

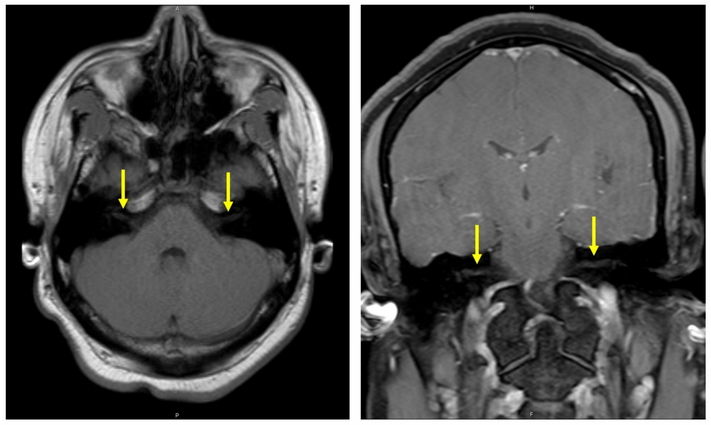

Figure 2. Axial (left) and coronal (right) T1 MRI showing subtle bilateral enhancement along CNVII pathway indicated by yellow arrows. Consistent with an unusual Bell's palsy or other inflammatory changes.

Table 1. Significant Lab Values

ACE	19 U/L
ANA	Negative
CMV IgG Ab	<0.60 U/mL
CMV IgM Ab	<30.0 AU/mL
CRP	10.6 mg/L (H)
EBV Ab IgG	117.0 U/mL (H)
EBV Ab IgM	<36 U/mL
EBV Nuclear Antigen Ab IgG	>600.0 U/mL (H)
ESR	37 mm/hr (H)
GC	Negative
HIV	Negative
HSV-1	Negative
HSV-2	Negative
IgE	827.3 IU/mL (H)
IgA	407.3 mg/dL (H)
Lyme total Ab	Negative
Lyme IgM/IgG Ab	Negative
Neisseria meningitis	Negative
RVP	Negative
Treponemal Ab	Nonreactive
WBC	10.2 /mm3 (H)

Table 2. Lumbar Puncture Results

Appearance of fluid	Hazy
WBC	95 /mm3 (H)
RBC	1460 /mm3 (H)
Lymphocytes	93% (H)
Monocytes	6% (L)
Glucose	61 mg/dL
Protein	54.9 mg/dL (H)
MEP	Negative

Tables 1 and 2. Significant lab values and lumbar puncture results. (H)= high, Ab= antibody, ESR= erythrocyte sedimentation rate, GC= gonorrhea chlamydia, RVP= respiratory viral panel, MEP= meningitis encephalitis panel.

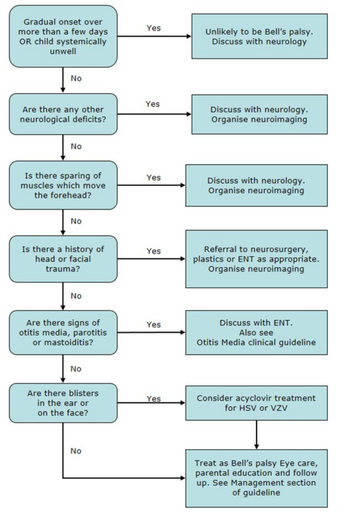

Figure 3. Flow chart for management of pediatric facial paralysis. Source: Royal Children's Hospital

Discussion & Conclusion

- While unilateral facial palsy is usually idiopathic or viral in origin, bilateral facial palsy is a rare and clinically complex condition.
- Many etiologies of bilateral FNP are life-threatening which requires immediate intervention.
- In this case, common systemic diseases were ruled out (Table 1).
- MRI and LP confirmed viral or other inflammatory disease processes affecting CNVII (Figure 2) (Table 2).
- Etiology appeared to be from prior or repeated EBV exposure or infection (Table 1).
- For cases of facial palsy, it is best to have a diagnostic approach (Figure 3) and consult neurology immediately.
- Empiric treatment with corticosteroids, antibiotics, or antivirals can be given based on the initial assessment.

References

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