A Case of Idiopathic Acquired Neonatal Bell’s Palsy

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Abstract

Neonatal idiopathic Bell’s palsy is a very rare diagnosis with only a few previously published case reports of infants responding well to oral corticosteroid use. This trial therapy likely comes from adult data where clinical outcomes are improved following steroid use, although the data in childhood cases are equivocal. In this specific population of infants <28 days of age at presentation, the most common causes of Bell’s palsy include congenital, birth trauma, and syndromic (likely with no indication for steroid treatment). In those with noncongenital Bell’s palsy, infectious and structural causes should first be ruled out. In this article, we present the third known case report of a 16-day-old presenting with acute Bell’s palsy with negative infectious workup and normal brain imaging. He was treated with a 7-day course of oral prednisone and had eventual resolution of symptoms.

Keywords

neonatal Bell’s palsy, idiopathic, acquired, prednisone

Case Description

A 16-day-old male presented to our emergency department with new-onset left facial nerve palsy for 1 day. Birth history significant for term vaginal delivery with vacuum assistance. There were no perinatal complications and he was healthy at birth (Figure 1). The mother had third trimester infectious screening completed about 1 month prior to delivery that was all negative. She had no known infections during pregnancy and no history of oral or genital lesions.

The day prior to presentation his mother noted the left side of his face did not move when he cried and he could not fully close his left eyelid (Figure 2). This was an abrupt change as he was previously moving both sides of his face normally. He was evaluated at a newborn visit at 5 days of age with no abnormalities. Other than the facial movement, he was acting appropriately for a newborn.

Initial examination was notable for an alert, vigorous, well-appearing infant. He had a normal-sized head, with head circumference z score of 0.04. Anterior fontanelle was open and flat. His pupils were reactive with normal bilateral light reflex. His cardiorespiratory, abdominal, and genital examinations were normal. His neurologic examination was notable for lack of movement of the forehead, cheek, and corner of the mouth on the left side when crying. Also notable for lack of tear production in the left eye. When blinking, it was notable that the left eyelid was not closing. All of this was consistent with a lower cranial nerve VII defect. All other cranial nerves were intact with normal neonatal reflexes and good strength for age.

In the emergency department, there was concern for infectious etiology, so a full neonatal sepsis workup was undertaken and unrevealing. Complete blood count, comprehensive metabolic panel, coagulation studies, and urinalysis all were normal. The lumbar puncture was traumatic with >20000 red blood cells, but otherwise normal. Given there was no concern for bacterial meningitis, he was started on acyclovir and admitted to the hospital.

Neurology and infectious disease teams were consulted. A brain magnetic resonance imaging and temporal bone magnetic resonance imaging were normal. Herpes simplex virus, varicella, and cytomegalovirus cerebrospinal fluid and blood polymerase chain reaction testing were all negative so acyclovir was discontinued. HIV and syphilis testing were also negative. Given negative infectious testing, oral prednisone 0.5 mg/kg/d was started on day of life 18 following discussion of risks and benefits with his mother. He demonstrated mild improvement in symptoms following 1 dose and was discharged with a total 7-day course of prednisone. The patient was lost to primary care follow-up for many months. During

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a discussion with his mother <2 weeks following discharge, his symptoms had resolved. He was seen in the emergency department for unrelated problems 27 days later and had no deficits on examination. At his 6-month well-child visit, he had no visible abnormalities and was growing well.

**Discussion**

The vast majority of causes of neonatal Bell’s palsy are congenital or related to birth trauma. About 2 in 1000 live births have congenital facial nerve paralysis. Risk factors include forceps-assisted delivery, prolonged labor, and large for gestational age babies. There are also disorders related to absence of the facial muscles that can mimic Bell’s palsy, which are also congenital. Syndromes such as hemifacial microsomia, mobius syndrome, and Cayler cardiac syndrome can also present with congenital Bell’s palsy. Facial nerve palsies that are related to birth trauma are likely to resolve by 3 to 6 months of age without intervention.

There are few case reports of acquired Bell’s palsy in neonates, specifically those younger than 1 month of age. Khair et al reported on a 15-day-old presenting with new-onset
unilateral facial nerve palsy with negative viral and bacterial testing who responded to 7 days of oral prednisone with full recovery 2 weeks following treatment initiation. Saini et al reported on a 4-week-old with similar presentation who responded rapidly to oral corticosteroids. Through literature review, this is the third case of neonatal idiopathic unilateral Bell’s palsy, all 3 responding to oral corticosteroids.

Although neonatal evidence is lacking, there is more evidence with regard to idiopathic Bell’s palsy in older children and adults. A retrospective chart review in Turkey of 144 children 18 years and younger studied 115 children with idiopathic Bell’s palsy, with the remainder related to infection or congenital syndromes. A total of 98.3% of the patients (regardless of the cause) fully recovered at 1-year post attack without a difference between those who received oral corticosteroids and those who had no treatment. Another retrospective study in Korea of 100 children, median age 7.4 years, showed no difference in outcomes with or without corticosteroid use. A recent large Cochrane systemic review among adult patients showed significant improvement in symptoms of idiopathic Bell’s palsy with the use of corticosteroids. There are many more studies in adults than children, and no randomized or retrospective studies in neonates looking at the utility of steroids in the treatment of this condition. All pediatric studies have equivocal results in the use of steroids, although there are now 3 case reports of corticosteroid use in neonates who have shown rapid improvement.

Resolution of the symptoms on neonatal Bell’s palsy is important to prevent long-term side effects that include social isolation, future surgeries, and short-term difficulties with eating. Although neonatal idiopathic Bell’s palsy is exceedingly rare, it is exciting to have a third case where low-dose oral corticosteroids lead to resolution of symptoms and allowed the infant and family to return to normal.

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Ethics Approval
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Informed Consent
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