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Case Report

Bell's palsy in a seven-month-old twin infant: a case report

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Abstract: Idiopathic peripheral facial paralysis is a rare condition in the pediatric population under one year of age, characterized by paralysis of the structures innervated by the facial nerve. This report describes the first infant in Brazil to be diagnosed with this clinical condition. A 7-months-old twin infant presented with altered left oromotor control and a discrete incomplete closure of the left eyelid when blinking, although with normal tear production. Her primitive reflexes were present and the spontaneous movements of the four limbs were normal. An investigation for infectious etiology and a magnetic resonance imaging of the brain were performed and did not show any alterations. Thus, the diagnosis of Bell's palsy was assumed, and oral prednisone was prescribed for five days. The patient evolved with total resolution of the facial paralysis during the first two weeks after discharge. Most cases of peripheral facial paralysis in children are idiopathic, while the others are associated with infectious and/or traumatic etiologies. There are still no consistent data proving the benefit of the use of corticoid alone or in combination with antiviral drugs for the treatment of children under one year of age.

Keywords: Facial Asymmetry; Bell Palsy; Infant.

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1. Introduction

Peripheral facial paralysis (PFP) is the main dysfunction of a cranial nerve found in children and adults [1]. It may present an etiology of congenital, infectious, ischemic, vascular, compressive or, in most cases, idiopathic nature (in which it was previously called Bell's palsy). Bell's palsy (BP) was a condition first described by the Scottish surgeon Charles Bell in 1830 and is characterized as a unilateral facial paralysis of the structures innervated by the facial nerve of sudden onset and unknown cause [2].

The disorder is quite uncommon under the age of 10 years, reaching an estimated 2.7 cases per 100,000 each year in this age group, with no greater prevalence between the sexes [3]. In the pediatric population under one year of age, idiopathic peripheral facial paralysis remains a rare condition, with few reports found in the medical literature. Among these, it is known that Saini et al described one of the first proven case of Bell's palsy in 2012, while the most recent case was reported by Falla-Zúñiga & Rojas-Cerón in 2021, with both patients evolving with good clinical response and no residual dysfunction, after treatment with oral corticosteroids and intravenous acyclovir, respectively. On the other hand, in this same age group, case reports of non-idiopathic PFP are more extensive and most of them result from congenital nature or birth-related trauma [4].

For this reason, we present the case of a twin infant who was only 7 months old with Bell's palsy and who evolved to cure.

2. Case Report

A female twin infant, 7-months-old, presented asymmetry of the right lip commissure for 2 days, with no other associated symptoms. As regards relevant previous history, the mother reported an isolated febrile episode approximately 15 days before, which was completely resolved. Infectious screening was carried out at that time and showed no alterations. Since then, she denied other febrile episodes.

The mother had negative infectious screening during prenatal follow-up and she did not use alcohol or any other drugs at the time of pregnancy. She presented with restricted intrauterine growth and threat of premature delivery at 30 weeks gestational age, so corticosteroids were administered to accelerate fetal lung maturation and caesarean delivery was performed at 30 weeks 1 day gestational age. The patient of this case was reported as twin 2, showing inverted venous duct flow at Doppler, born small for gestational age, with weight 800g and Apgar score 1/6/8, depressed, bradycardic and hypotonic, requiring intubation. Patient remained in the Neonatal ICU and received one surfactant dose. At transfontanel ultrasonography no alterations were evidenced. Patient did not demonstrate obstetric trauma at birth or facial asymmetry in her first months of life. Her diet was exclusively breastfed for the first 6 months of her life. From this date, complementary breastfeeding was started through the introduction of solid foods, which the patient accepted well.

According to the information obtained, twin 1 was born appropriate for gestational age and with a normal Apgar score at birth. To date, she has grown at a properly rate, did not show any clinical manifestations of facial paralysis and she never needed to be hospitalized for illness. On physical examination, the infant of this case report was in good general condition, and there was a deviation of the lip commissure to the right, with altered oromotor control to the left (Figure 1). Besides a discrete incomplete closure of the left eyelid when blinking, although with normal tear production. The primitive reflexes were present and the spontaneous movements of the four limbs were normal. She had no allergies or any diagnosed prior illnesses. No other alterations were observed. It was checked that her recommended vaccination record was complete.

Figure 1. Patient during hospitalization, presenting with altered oromotor control to the left and discrete incomplete closure of the ipsilateral eyelid.

Investigation for infectious etiology (blood count, C-reactive protein, VDRL, anti-HIV, toxoplasmosis, rubella, cytomegalovirus, herpes simple virus and dengue antibodies) was all negative. In addition, as the hospital where the patient was admitted is entirely dedicated to the Brazilian Health System, SUS, genetic testing was not authorized due to the high costs. A magnetic resonance imaging (MRI) of the brain with contrast did not

show any alterations. Therefore, according to a negative infectious screening, oral prednisone was prescribed at a dose of 1 mg/kg/day for five days associated with the application of artificial tears to protect the affected left eye from corneal damage, and the Bell's palsy diagnosis was then considered.

The patient was discharged on the eighth day of hospitalization with mild improvement of facial paralysis, and outpatient follow-up with the physical therapy team was recommended. Contact was maintained with the mother during the first two weeks after discharge, who reported total resolution of the facial paralysis, without the infant presenting deviation of the lip commissure or incomplete ocular closure when crying or smiling.

In time, after about two months from hospital discharge, the mother and the patient visited the hospital, where the authors noted that the infant no longer presented any clinical manifestations of Bell's palsy or residual dysfunction, in addition to having oral acceptance of the foods recommended for her age group and adequate neuropsychomotor development. The mother stated that she was unable to schedule appointments with Pediatric Physiotherapy, as instructed at the time of discharge.

3. Discussion and conclusions

Bell's palsy is a self-limited, monophasic facial nerve palsy of acute-subacute onset [5]. It may occur at any age, although it is more common between 15 and 45 years of age [6]. Regarding idiopathic PFP in children under one year of age, literature is scarce, with two cases in infants [7-8], and four cases in newborns being described worldwide so far [4,9-11]. Khair & Ibrahim reported the youngest patient, a 15-day-old newborn with facial asymmetry, negative infectious screening, a normal brain MRI and rapid and complete recovery from the disease after two weeks of oral prednisolone use [4]. Dealing with patients of similar age range to this case report, Manzouri et al. presented a three-month-old infant with idiopathic unilateral facial nerve palsy (FNP) [8] and, in the more recent literature, Roberts et al. described a 6-week-old infant with an equivalent clinical picture and successful treatment of a shorter duration (14 days) using steroids to achieve remission of the disease [7].

From the literature review to the best of our knowledge, this report describes the first infant in Brazil to be diagnosed with Bell's palsy and the second child under 1 year of age in Latin America. Among the etiologies of PFP in the pediatric range, Psillas et al. performed a retrospective study encompassing 124 children with PNF admitted to a university hospital and observed the presence of an idiopathic etiology (Bell's palsy) in approximately 88% of them, the remaining being related to other etiologies [12]. This is corroborated in another study, which also identifies BP as the most common cause of PFP in children, followed by infectious, traumatic, congenital, and neoplastic etiologies [13].

Although BP has been studied since 1830, little is known about its pathophysiological mechanisms. Currently, the most accepted theory highlights inflammation and edema of the facial nerve as responsible for triggering the compression of this nerve within the facial canal [2]. In the patient described in this report, no consistent evidence for infectious etiologies was found. The hypothesis of congenital disease was ruled out because the symptoms appeared only when the patient was 7 months old, and the neonatal data reported an uneventful delivery. As a brain MRI did not find suggestive lesions, neoplastic etiologies were also excluded. Therefore, the hypothesis of Bell's Palsy was maintained. There are still no consistent data confirming the benefit of using corticosteroids alone or associated with an antiviral for the treatment of BP in children. The discussion is based on the complete resolution that children present regardless of whether they use corticosteroids or not [14].

Previous studies have not provided evidence on the efficacy of prednisone in reducing recovery time in paediatrics compared to those with spontaneous resolution of the disease [15, 16].

4. Conclusions

Despite the limited availability of information on Bell's Palsy in the pediatric age bracket, it is clear that the idiopathic component stands out. The clinical diagnosis has proved to be sufficient for the cases reported in the literature, with imaging studies being aimed only at specific clinical presentations. The therapeutic approach is controversial, as there is not enough scientific evidence, considering the small number of scenarios available for studies, and that among the available case reports, it is possible to identify self-limited cases.

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Conflicts of Interest: None.

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