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Case Report

Facial Tics Should be Considered as One of the Differential Diagnoses of Facial Nerve Palsy

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Abstract

Facial nerve palsies are a prevalent and significant concern, particularly for ear, nose, and throat (ENT) surgeons, as well as in general medical practice. The facial nerve plays a critical role in communication and emotional expression, making any functional impairment potentially detrimental to an individual's quality of life. An essential aspect of the initial assessment for a patient presenting with facial weakness is the differentiation between lower motor neuron (LMN) and upper motor neuron (UMN) palsies. The underlying causes and subsequent treatment approaches for these conditions differ considerably. By integrating anatomical knowledge with the patient's clinical history and examination findings, clinicians can accurately identify the likely cause of facial nerve palsy and tailor management strategies accordingly. The most common cause of facial nerve palsy is classified as Bell palsy, the etiology of which remains largely unknown. The incidence of Bell palsy ranges from 10 to 40 cases per 100,000 individuals. This condition is often diagnosed through exclusion. Clinically, it typically presents as a lower motor neuron lesion resulting in total unilateral paralysis. Patients may experience a viral prodromal period prior to the onset of symptoms, and recurrence can occur in up to 10% of cases. The full presentation of facial nerve palsy generally arises within the first 24 to 48 hours. Compression of the nerve within the bony canal may lead to oedema and secondary pressure, resulting in ischemia and diminished function. Recovery can extend up to one year, with approximately 13% of patients experiencing incomplete recovery. In our case, facial tics will be prioritized at the top of our differential diagnosis list. Tics are characterized as "sudden, rapid, recurrent, nonrhythmic motor movements or vocalizations." They may be classified as simple tics, involving a singular movement or sound, or complex tics, which encompass a combination of various actions or vocalizations.

Keywords: *Facial; Tics; Differential; Diagnosis; Facial Nerve; Palsy*

Introduction and Case Report

A mother and her four-year-old daughter recently visited us with concerns regarding what they referred to as a "twitch". To further clarify their concerns, they shared a video that depicted the daughter during play, which highlighted the twitching behaviour. The twitching manifested as a noticeable tightening on one side of her face, resembling a wink, which occurred concurrently with a hard swallow, resulting in facial asymmetry. The mother reported that this behaviour had been occurring more frequently over the past few months, sometimes lasting for hours during play and arising in stressful situations. She expressed her worries about facial nerve paralysis and mentioned that their general practitioner had recommended they consult us.

After conducting a thorough medical history and examination, we have ruled out most organic causes of facial asymmetry, including:

1. Congenital hypoplasia of the depressor anguli oris muscle (CHDAOM) is a rare condition that may lead to asymmetric facial expressions during crying in childhood. It is usually evident at birth, with the asymmetry becoming particularly noticeable when the child is crying, and it tends to resolve during periods of rest [1].
2. Facial nerve palsy: Was excluded after detailed history and thoroughly examination. The assessment of facial nerve paralysis is standardized through the House-Brackmann grading system, which is categorized as follows:

    - Grade I: Normal symmetrical function throughout.
    - Grade II: Slight weakness on close inspection and slight asymmetry of the smile.
    - Grade III: Obvious non-disfiguring weakness, complete eye closure.
    - Grade IV: Obvious disfiguring weakness, inability to lift the brow, incomplete eye closure, severe synkinesis.
    - Grade V: Barely perceptible motion, incomplete eye closure, slight movement of the corner of the mouth, absent synkinesis.
    - Grade VI: No movement, atonic [2].

Additional clinical tests for assessing facial nerve lesions:

1. Blink test (Corneal reflex): Tapping on the patient's glabella results in suspension of blinking on the affected side. The ophthalmic division of the trigeminal nerve controls the afferent limb, while the temporal and zygomatic branches of the facial nerve control the efferent limb.
2. Schirmer test: This test assesses lacrimation of the lacrimal gland. Lacrimation will be decreased by 75% compared to the normal side using a folded strip of blotting paper in the lower conjunctival fornix. A unilateral lesion within the geniculate ganglion can produce bilateral lacrimal deficiencies.
3. Stapedial test: This involves testing the stapedius reflex in response to high-intensity sound stimuli, which causes contraction of the stapedius muscle mediated by the facial nerve. Tympanometry is used to perform this test.
4. Salivary test: Salivation rate is assessed from the submandibular duct following stimulation with a 6% citric acid solution. A positive result, indicated by a 25% reduction in salivation on the affected side, suggests a lesion at or proximal to the root of the chorda tympani.
5. Taste test: This involves testing the taste response to salt, sweet, sour, and bitter tastes along the lateral aspects of the anterior two-thirds of the tongue. A positive result indicates a lesion at or proximal to the root of the chorda tympani [3].

3. Tic convulsif: The association of trigeminal neuralgia and hemifacial spasm. Sometimes caused by a posterior fossa mass lesion. When these two disorders co-exist, a rare association known as 'tic convulsif', a lesion involving the fifth and seventh cranial nerves in the cerebellopontine angle is extremely likely [4].
4. Myokymia is recognized as the most prevalent facial movement disorder. This condition is characterized by fine, involuntary contractions that are rhythmic in nature, typically occurring unilaterally in the lower eyelid. These contractions are often associated with factors such as fatigue, stress, and excessive caffeine consumption. Generally, the contractions are intermittent and tend to resolve within a few days; however, they may persist for several weeks or even months. While myokymia can serve as an initial indicator of Blepharospasm (BEB) or Hemifacial Spasm (HFS), it is more commonly confined to a single eyelid. Eyelid myokymia is almost always considered benign, though it has the potential to involve other facial muscles. In such cases, this form of facial myokymia may indicate more serious underlying conditions, including brainstem disease [5].

5. Facial synkinesis is the contraction of facial muscles during simultaneous voluntary movements such as smiling or eyelid closure. Marcus Gunn jaw-winking ptosis, is one important example congenital form of facial synkinesis [6].

Figure 1: *A 4-year-old child exhibiting facial asymmetry, with mouth deviation toward the right side and a pronounced right nasolabial fold in comparison to the left side. Parental consent has been obtained.*

Figure 2: *A 4-year-old child exhibiting a symmetrical facial structure and evenly distributed nasolabial folds bilaterally, with no observable deviation of the mouth. Consent from the parents has been obtained.*

Discussion

In children and adolescents, tics are frequently triggered by two types of situations. Firstly, they can arise in contexts characterized by heightened emotional intensity, such as excitement, stress, anger, fear, worry, or fatigue. Secondly, tics may also be triggered during periods of mindless relaxation, such as sitting in a car, watching television, or going to sleep. Here are some important considerations to share with children and their families regarding tics. Tics are relatively common in childhood. Research indicates that between 20% to 50% of children may experience some form of simple tic at some point. In my experience, lip licking is particularly prevalent. The onset of tics typically occurs in early childhood. Most children will see their tics resolve completely within a year without any intervention. For the minority who experience persistent tics, approximately 85% will notice a reduction in their symptoms during adolescence. According

to the DSM, these short-lasting tic symptoms are classified as "provisional tic disorder". It is essential to recognize that a small percentage of children may experience tics that are longer-lasting and more problematic. While findings in this area of research are diverse and sometimes contradictory, some studies suggest that this may affect around 3% of children or adolescents who report tics at some point. It is important to remember that children and teens typically have limited long-term control over their tic [7].

Although they may suppress it momentarily, they often feel strong urges to perform the tic, and attempts to control it can sometimes lead to increased stress, which may exacerbate the tic. Many children and adolescents respond positively to learning relaxation strategies to help manage negative emotions such as stress, frustration, or worry. This is an opportunity to collaborate with parents to brainstorm and document options for the young person, equipping them with strategies to use when they feel overwhelmed. In some cases, we may implement a more comprehensive approach that combines these strategies with a habit reversal technique. This integrated method is often referred to as Comprehensive Behavioural Intervention for Tics (CBIT) [8].

Conclusion

The case highlights the significance of differentiating between facial tics and other potential causes of facial asymmetry. An accurate diagnosis is essential to prevent iatrogenic complications and to inform the appropriate care plan and management strategy.

Bibliography

1. Arya S., *et al*. "Facial asymmetry in a crying newborn". *Case Reports in Pediatrics* (2017): 6368239.
2. Reitzen SD., *et al*. "Significance and reliability of the House-Brackmann grading system for regional facial nerve function". *Otolaryngology–Head and Neck Surgery* 140.2 (2009): 154-158.
3. Valls-Solé J. "Facial nerve palsy and hemifacial spasm". *Handbook of Clinical Neurology* 115 (2013): 367-380.
4. Yin Z., *et al*. "The epidemiology, cause, and prognosis of painful tic convulsif syndrome: an individual patient data analysis of 192 cases". *World Neurosurgery* 147 (2021): e130-e147.
5. NR Miller. "Eyelid myokymia". *Survey of Ophthalmology* 56.3 (2011): 277-278.
6. MW Robinson., *et al*. "Facial rehabilitation: evaluation and treatment strategies for the patient with facial palsy". *Otolaryngologic Clinics of North America* 51.6 (2018): 1151-1167.
7. Fahn S., *et al*. "Principles and practice of movement disorders E-book". Elsevier Health Sciences Amsterdam, The Netherlands (2011).
8. Singer H., *et al*. "Movement disorders in childhood". 2nd edition. Elsevier London, UK: (2016).

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