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CASE REPORT

# Characterization of the physiologic tartaleo from the point of view logofoniátrico

## Caracterización del tartaleo fisiológico desde el punto de vista logofoniátrico

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**ABSRACT**

Physiological staccato is the most common speech disorder in pediatric age. Its etiology is multifactorial. The diagnosis is based on a correct anamnesis and clinical examination. Despite the fact that a large number of cases resolve spontaneously, treatment should not be delayed for more than a year, because long-standing forms have a worse prognosis. A literature review was carried out, finding 35 articles in total, of which only 15 fulfilled the validity criterion in order to explain the evolution of a clinical case with physiological stagnation from the point of view of Logofoniatric rehabilitation. Physiological tartarus is considered one of the chronic logofoniatric diseases that occur more frequently in the child population, which shows that the family's knowledge about the management and treatment of this condition in their children is still insufficient.

**Keywords:** Speak; Stammering; Disorder; Verbal Fluency; Forecast; Treatment.

**RESUMEN**

El tartaleo fisiológico es el trastorno del habla más frecuente en la edad pediátrica. Su etiología es multifactorial. El diagnóstico se basa en una correcta anamnesis y exploración clínica. A pesar de que un gran número de casos se resuelve espontáneamente, no se debe retrasar más de un año el tratamiento, porque las formas de larga evolución tienen peor pronóstico. Se realizó una revisión de literatura encontrándose 35 artículos en total de los cuales solo 15 cumplían el criterio de validez con el objetivo de explicar la evolución de un caso clínico con tartaleo fisiológico desde el punto de vista de la rehabilitación Logofoniátrica. El tartaleo fisiológico está considerada dentro de las enfermedades Logofoniátrica crónicas que se presentan con mayor frecuencia en la población infantil lo que demuestra que aún es insuficiente el conocimiento de la familia acerca del manejo y tratamiento de esta afección en sus hijos.

**Palabras clave:** Habla; Tartamudez; Trastorno; Fluidez Verbal; Pronóstico; Tratamiento.

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## INTRODUCTION

Physiological stuttering is nothing more than a pathological alteration in the rhythm of speech. It is an involuntary alteration in the fluency of verbal expression characterized by the repetition of sounds, syllables, or words, accompanied by facial gestures or changes in breathing frequency, as well as speech blocks or prolonged pauses between sounds and phrases.[1,2] This is the most common form, accounting for around 80 % of cases. It occurs in children developing language skills, usually between the ages of three and six. It typically begins in patients with typical language development and often occurs suddenly (in half of cases, between one and three days, and in a third in a single day). This onset is not associated with specific environmental or social factors, and shyness is not a risk factor. Diagnosis is based on clinical findings, and no additional tests are necessary.[1,2]

Physiological stuttering or speech disfluency is a communication disorder (not a language disorder) characterized by involuntary interruptions in speech accompanied by muscle tension in the face and neck, fear, and stress. These are the visible expressions of the interaction of certain organic, psychological, and social factors that determine and guide the formation of an individual's being, behavior, feelings, and characteristics. The psychological effects of physiological stuttering can be severe, continuously affecting the person's mood and, in many cases, leading to significant social isolation.[1,2]

In addition, physiological stuttering is a highly stigmatized disability. The intelligence and emotional ability of the person who stutters are continually questioned, as it is believed that by "calming down" or "concentrating more on what is being said," they will be able to speak fluently. It typically begins between two and four, although it is often confused with age-related speech difficulties. Ultimately, only one in 20 children end up stuttering, and many of them outgrow the disorder during adolescence.[3]

Physiological stuttering does not distinguish between social class or race, but it is three to four times more common in men than women. No specific cause for this disorder has yet been found, but in February 2010, scientists announced the discovery of three genes associated with the prevalence of this condition. This has been studied for several years since it began to be noticed that stuttering is prevalent in families. Despite popular belief, this disorder is not associated with anxiety, nor is it an effect of anxiety; however, it does generate anxiety in individuals who have it, becoming a social phobia, where they fear stuttering in front of people, often leading to social isolation.[3]

Given the above, this study aims to explain the evolution of the clinical picture of a patient with physiological stuttering from the point of view of speech therapy rehabilitation.

## CLINICAL CASE

A four-year-old patient who, ten days ago, suddenly presented speech disorders consisting of hesitations, stuttering, oral imprecision, repetition of sounds, syllables, and words, elongation of sounds, and isolated and infrequent spasmodic muscle contractions. He has no other neurological symptoms. The parents relate this to a head injury suffered the day before the onset of symptoms. Previously, his speech was slow and considered normal for his age. He has acquired language skills and other neurodevelopmental milestones appropriately up to the present time.

### Examination

On examination, the patient's speech is coherent, with repetition of phonemes in sentences and prolonged pauses between them. Pronunciation is correct, but the patient must try to control it. He organizes sentences of three or four words without syntactic problems. He shows adequate oral comprehension. The rest of the neurological examination is regular.

### Diagnosis

At this stage, the child has the ability to think practically without limits but is disadvantaged by his limited articulatory capacity and vocabulary in these early years of life, which are characterized by hesitations, stuttering, oral imprecision, repetition of sounds, syllables, and words, elongation of sounds, and isolated and few spasmodic muscle contractions (tonus).

Given these findings, the patient is diagnosed with a verbal fluency disorder, which is physiological stuttering, a stage before stuttering, and evaluation by a specialist is recommended.

## DISCUSSION

Physiological stuttering or dysphemia is an involuntary alteration in the fluency of verbal expression. The repetition of sounds, syllables, words, speech blocks, or prolonged pauses between sounds and words characterizes it. Physiological stuttering is the most common form, with most children progressing to everyday speech through a balance between thought and speech, thereby acquiring adequate verbal expression through language maturation in children. The family environment plays a significant role. It is essential to adopt an intelligent and understanding attitude, ignoring the usual difficulties of this stage and slowly and gradually facilitating the acquisition of a larger vocabulary.[4,5]

One percent of children develop into definite stuttering, with a lack of coordination between speech mechanics and verbal conception with an organic hereditary-constitutional basis.[4,5]

In 2 % of cases, children develop an abnormal experience and exaggerated awareness of the oral difficulties inherent in this physiological stage of speech integration, which halt and divert the formation of oral automatism, causing them to react neurotically and become stutterers. This process occurs in two ways: exogenous and endogenous.[4,5]

Family pressures cause exogenous stuttering. The environment surrounding the child insists that they speak better, in a completely untimely "oral perfectionist" endeavor, most often in a demanding tone, demanding the suppression of repetitions and hesitations. It is easy to understand the critical situation in which the child is placed, realizing that he does not speak well and wants to suppress

his difficulties, for which he finds nothing at his disposal other than his articulatory muscular effort since the thought-speech balance, which is ultimately what will resolve the situation, can only come about through a process of maturation and vocabulary enrichment. These oral demands from family members, even if well-intentioned, place the child in a dead-end situation of spasmodic contractions that can only lead to stuttering.[4,5]

Another pathway, endogenous, is in which some children evolve toward stuttering without external pressure, become aware of their oral difficulties independently, and thus develop the disorder.[4,5]

**Evolution of physiological stuttering**

Some authors, starting from physiological stuttering, have proposed the concept of developmental stuttering.

Fröschels is recognized, among other achievements, for structuring the evolution of stuttering.

The evolution of the clinical picture, starting with repetitions of sounds, syllables, and words (clonus) typical of the physiological stuttering stage, is followed by the first muscle contractions, constituting a clonus-tonus stage. As the incidence of muscular effort increases, a tonus-clonus state predominates until finally reaching a stage characterized mainly by more frequent, greater intensity, and more organized, framing the initial stuttering. These difficulties continue to attract the attention of others and of the child himself, who, through self-criticism and increasingly insisting on the use of muscular force, quickly leads to a concatenation of symptoms that lead to defined stuttering, where awareness of his difficulties predominates.[6,7]

Most cases begin in the third year of life, and after age five, the risk of developing stuttering is very low. Differences between the sexes are minimal in the early years of life, while in adults, the male-to-female ratio is 4:1, indicating that women recover more frequently than men. The effects of race, culture, bilingualism, or socioeconomic status on the incidence and prevalence of stuttering remain unclear.[8]

There are many cases of spontaneous recovery, with figures varying between different studies. Monitoring these patients for one year before starting treatment is generally considered appropriate. However, in cases where the child is distressed, reluctant to communicate with others, or where there is significant parental anxiety, immediate treatment is indicated. Long-standing forms respond less well to treatment. One of speech therapists' most effective methods is the Lidcombe method, which teaches parents to use positive feedback techniques at home.[9,10]

**Advice for families**

The golden rule is that the child should not be aware that they are receiving speech treatment, let alone being observed or monitored in each activity.[10,11,12,13]

Guide the child:

- Speak slowly.
- Breathe before speaking or wait for the other person to finish speaking.
- Think before speaking.

Guidance for family members:

- Do not rush the child.
- Do not correct the child.
- Do not praise the child when they speak well.
- Do not scold the child if they speak poorly.
- In short, ignore their speech.

Perform activities to work on breathing, such as:

- Blowing up balloons
- Blow out candles (or any other object that interests them), gradually increasing the distance.

Tell stories aloud using pictures from storybooks that interest them, thus facilitating oral fluency and vocabulary development.

Play is a fundamental activity used to carry out corrective work.

Eliminate incorrect educational methods:

- Avoid putting the child in situations that cause tension, such as speaking in front of people they do not want to or showing off their knowledge.
- Do not make the child aware of their difficulty in communicating orally.

Ensure a good family dynamic where the child feels accepted, loved, listened to, and understood, and surround them with positive experiences.

Stimulate the child's development, always trying to avoid anxiety caused by communication and ensuring a proper daily routine and physical, mental, and environmental hygiene.

Count or make sustained sounds for a certain amount of time without interruption, always making it clear that it is a game, considering the child's age. Example: 1, 2, 3, 4... Aaaaaaa...

Carrying out these activities and considering this advice will undoubtedly facilitate communication with children.

**Treatment**

This is based on a series of measures to prevent the onset of the disease or avoid serious complications. To achieve this objective, it is necessary to:[12]

- Comply with all the family advice mentioned above.
- Stimulate or encourage the development of the child's vocabulary (by reading stories, telling anecdotes, talking to them a lot in a clear and precise manner, and without distorting words).
- Vowel prolongation: In short words or phrases, prolong the vowels:

Laaaaaaaaaaa peeeeeeeeeeloooooooooootaaaaaaaaaa.

## CONCLUSIONS

Physiological stuttering is a pervasive disorder whose epidemiological incidence has not yet been fully defined. It can occur due to various neurological disorders and injuries in different locations, and despite recent advances, no pathophysiological mechanism has been discovered that fully explains it. Its treatment is based on the usual approaches of a speech therapy rehabilitation program.

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## CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

## AUTHORSHIP CONTRIBUTION

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