

## Dystonia and The Role of the Dentist.

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### ABSTRACT

**Objective:** To evaluate the implications that dystonia can bring into and the role of dentist.

**Methods:** The case of 78-year-old woman who presented to the clinic with a diagnosis of dystonia is described.

**Results:** The patient had speech and feeding problems. After 2 years from her first dental treatment, dystonia started, and her language and nutrition started to worsened, she lost teeth until becoming edentulous.

In 2023 the problem got worse, until, in 2024, the patient died.

**Conclusions:** The present case report highlights that the complex pathology such as dystonia, prosthetic, orthodontic or maxillofacial treatments must be carefully planned and evaluated to avoid triggering serious problems that affect the patient's life. The dentist has the task to evaluate the advantages and disadvantages of dental treatment in subjects with this pathology.

**Keywords:** Dystonia; Dentistry; Prosthetics; Neurological Pathologies; Human

### INTRODUCTION

Dystonia is a condition characterized by involuntary muscle contractions that result in abnormal movements, primarily affecting the jaw, face, and tongue [1]. Etiologically, dystonia is categorized into primary and secondary forms [2]. Primary dystonias, which can be idiopathic or hereditary, often lack a specific cause. On the other hand, secondary dystonias are linked to underlying diseases or medication side effects, such as neurodegenerative disorders, brain injury, or drug reactions [3]. The clinical manifestations of dystonia are

variable, with classifications based on anatomical distribution and age of onset [4]. Anatomically, dystonia can manifest as focal, segmental, multifocal, or generalized [5].

Focal dystonia affects a single area of the body and its symptoms are limited to that single area, while segmental dystonia involves contiguous areas, its symptoms are widespread but bordering nearby body segments [6].

Multifocal dystonia affects non-contiguous areas, its symptoms are more widespread than the focal type, but not as widespread as the generalized one [7]. The generalized type is widespread throughout the body, it is often debilitating [8].

The age of onset can offer insights into prognosis and underlying causes, as early onset cases are more likely to be secondary, while late onset cases are often idiopathic or part of a neurodegenerative disorder [9].

Diagnosis of dystonia relies on clinical evaluation, which includes, physical examination, and neurological assessment genetic counselling [10].

Treatment options are limited, with management focused on symptom relief [11]. This case report investigated the dental implications of dystonia and the role of dentists in managing patients with this condition, emphasizing the significance of interdisciplinary care in enhancing outcomes [12].

## CLINICAL FEATURES AND TREATMENT OF DYSTONIA

Dystonia can mimic various dental and medical conditions, making it easily overlooked [13,14]. Frequently reported symptoms include teeth grinding (bruxism), tooth fractures and breakages, facial and jaw pain, drooling, dislocation or partial dislocation of the temporomandibular joint (TMJ), and involuntary movements of the face and tongue [14,15].

Patients may also experience non-specific complaints of muscle tension and fatigue in the facial and chewing muscles, as well as headaches, depression, anxiety, and sleep disturbances [15,16]. Interestingly, voluntary actions often exacerbate oromandibular dystonia (OMD) [16,17].

These actions can either be localized to the muscles involved in chewing and speaking (such as jaw tremors while talking) or affect distant parts of the body (for example, the jaw deviating only during walking) [17,18].

In some cases, symptoms may be specific to certain tasks or activities, occurring only during talking but not while singing, for example [18,19]. Voluntary movements like chewing or positioning the tongue in specific ways may alleviate or temporarily halt symptoms [19,20]. This phenomenon, known as "geste antagoniste" or sensory trick, is a distinctive characteristic of dystonia [20,21]. When evaluating patients, it is crucial to inquire about their occupational history, particularly for professional woodwind and brass players who have a higher risk of developing OMD, also known as "embouchure dystonia" [21,22].

These individuals may experience difficulties in creating a seal around the mouthpiece of their instrument (task-specific), or the condition may progress to manifest during other activities as well, such as retracting the lips while talking or spontaneously grimacing at rest [22,23].

Currently, there is no specific and effective therapy for OMD, but treatment options include botulinum toxin injections and a combination of oral medications like anticholinergics, muscle relaxants (such as Baclofen), and benzodiazepines (like Clonazepam) [23,24]. In cases of severe or generalized segmental dystonias that do not respond to pharmacological treatment, non-surgical procedures like deep brain stimulation may be considered [24,25].

## CASE REPORT

A case study is presented involving a 78-year-old woman who works as a teacher. The patient experienced the onset of certain issues following the placement of an upper denture in 2014. The mistake was not diagnosing the dystonia before the prosthesis was placed and so the patient developed the disease. Any changes of the occlusal plane on this type of patients may produce the development of the disease.

After 2 years the problem began, specifically, dystonia affected the tongue, as well as the muscles involved in facial expression and chewing [26].

Consequently, speech and chewing difficulties arose. Despite various treatment options, such as botulinum toxin injections and pharmacological interventions for spasm, the condition progressively worsened over the period of time from 2016 to 2023. This deterioration not only impacted essential functions like chewing, nutrition, and language, but also had psychological implications.

The patient's quality of life further declined due to the isolation resulting from this type of problem (Figure 1) Note above all the extreme occlusal canting that has formed, due to the inability to control the tongue (Figure 2). Extreme periodontal damage was also noted in the lower sector (Figure 1 and Figure 2). in detail the photo representing the botulinum injection (Figure 3).



Figure 1





Figure 2



**Figure 3**

**CONCLUSIONS**

To summarize, the correlation of dentistry and dystonia poses a complex challenge that needs careful awareness and collaboration across disciplines [27,28].

This article highlights the intricate nature of dystonia and its impact on oral health, which extends beyond traditional dental concerns and affects patients' overall wellbeing and quality of life [28,29].

Dentists have a crucial role in not only identifying the signs and symptoms of dystonia but also in developing comprehensive treatment plans that address both the dental aspects of the condition and its broader neurological implications [30,31].

By promoting an understanding of dystonia within the dental community and adopting a patient-centered approach that integrates dental care with holistic management strategies, we can strive to optimize outcomes and improve the oral health and overall comfort of individuals living with this challenging neurological disorder [32,33]. Not to be underestimated the control even at an early age in order to quickly intercept any development of this disease [33-37]. This case is an example of a chain error and therefor highlights the need to treat a patient with complex pathologies with a multidisciplinary approach.

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