



Is Otagia be a symptom of anxiety in children?

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ABSTRACT

One of the common causes of ear pain (Otagia) in children is the pain felt in the temporomandibular region due to bruxism, usually accompanied by stress and anxiety. The diagnosis and treatment of anxiety at an early age will affect the future lives of children.

Our aim in the study was to investigate the presence and subtypes of anxiety in children with otagia due to bruxism. In our study, 86 children aged between 6 and 16 years old who had ear pain and whose pain and tenderness were detected in the temporomandibular joint area and 40 healthy children were included as the control group. The children in both study groups were administered the Spence Children's Anxiety Scale (SCAS) test by the clinical psychologist. There was no statistical correlation between the children with bruxism and normal children ($p > 0.05$). While anxiety rate was 82% in children with bruxism, this rate was found to be 12.5% in normal children, this result was also statistically significant ($p < 0.01$). According to the SCAS test, when the subscales of anxiety detected in children with bruxism were evaluated, According to the SCAS test, when the subscales of anxiety detected in children with bruxism were evaluated, it was observed that the performance anxiety was high in the 6–12 and 12–16 age group. However, obsessive symptoms were mostly observed in the 12–16 age group while separation anxiety was detected in children in the 6–12 age group.

1. Introduction

Ear pain (Otagia) in children is a common symptom encountered by pediatricians and ENT specialists. The reason for primary otagia in children is mostly the diseases of the ear. Secondary otagia describes pain felt in the ear due to multiple innervation of the ear, due to pathologies in neighboring or different regions. One of the common causes of secondary otagia is the temporomandibular joint-induced pathologies caused by bruxism mostly accompanied by stress and anxiety [1,2]. Bruxism is defined as periodic, stereotyped, and unusually increased movement disorder of the chewing system, where clenching and grinding teeth are observed day or night. The incidence of bruxism ranges from 1420% in children [3]. Anxiety is a subjectively felt emotion such as fear and tension, and it occurs in any situation where the integrity of the self is threatened (Freud 1926). Children with anxiety feel pain in the preauricular region during speech and chewing due to bruxism. Spence Children's Anxiety Scale (SCAS) is a reliable scale that commonly used evaluates multiple anxiety symptoms in children (Spence, Edwards, and Kennedy, 2010). The scale evaluates 5 different factors with its subscales. These; social phobia, separation anxiety, specific phobia, common anxiety disorder and obsessive-compulsive disorder. In children, determining the presence of anxiety early as well as determining its subtypes is very important in terms of

planning and continuing the treatment.

The aim of this study was to investigate the presence and subtypes of anxiety in children with ear pain due to bruxism.

2. Material and method

In our study, 86 children (47 boys, 39 girls) aged between 6 and 16 years old, who applied to the ENT clinic of Lokman Hekim Akay Hospital for ear pain, whose ear disease was not detected in the examination and who had pain and tenderness in the temporomandibular joint movement and as a control group, 40 healthy children aged between 6 and 16 years old (22 boys, 18 girls) were included in the study. Trauma history, systemic disease, drug use, medical or surgical intervention, dental occlusion and orofacial skeletal disorder were not included in the study. ENT examinations of children with otagia symptoms and healthy children were performed by the same specialist physician and psychological evaluations performed by the same Expert Clinical Psychologist. The SCAS test was administered to all children by the Clinical Psychology department. In this study, the SCAS test was not used as a diagnostic tool for anxiety disorders, rather it was used to provide an indication of the nature and extent of anxiety symptoms to assist in the diagnostic process. Statistical analysis was done in SPSS 22.0 program.

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Table 1
Gender distribution of children with bruxism and normal children.

	Children with bruxism	Normal children
Boy	47 (%54)	22 (%55)
Girl	39 (%46)	18 (%45)
Total	86	40

Table 2
Symptom of anxiety distribution of children with bruxism and normal children.

	Symptom of anxiety	No anxiety Symptom
Children with bruxism	71 (%82)	15 (%18)
Normal children	5 (%12.5)	1 (%2.5)

Table 3
Distribution age of anxiety symptoms in children with bruxism.

	Symptom of anksiyete in children with bruxizm
6–12 age	54 (%76)
12–16 age	17 (%34)

Table 4
Distribution of anxiety subscale evaluation results by age in children with bruxism.

	Obsessive symptoms	Performance anxiety	Separation anxiety
6–12 age	%5.9	%76.1	%59.7
12–16 age	%51.7	%72.4	%1

3. Result

In our study, the correlation of gender between 86 children with bruxism (47 boys, 39 girls) and 40 (22 boys, 18 girls) normal children was not statistically significant ($p > 0.05$) (Table 1). While the incidence of anxiety symptoms in healthy children was 12.5%, it was found to be 82% among children with bruxism (Table 2), this result was found statistically significant ($p < 0.01$). In the sub-scales of the SCAS test in our study, it was observed that the performance anxiety score was the highest (76.1%) in children aged 6–12 years. The separation anxiety score was 59.1% and the obsessive symptoms score was 5.9% (Table 3). In the subscales of the SCAS test performed in children with bruxism and anxiety between the ages of 12–16, the highest score was observed in the performance anxiety (72.4%), and then the obsessive symptoms score (51.7%) were high. The separation anxiety score was found to be the lowest (1%) (Table 3).

4. Discussion

In our study, anxiety symptoms were found at a high rate (82%) in children with bruxism who applied to the ENT clinic due to otalgia complaints. In addition, subtypes of anxiety according to age groups the scores of obsessive symptoms, performance anxiety and separation anxiety were found to be high (Table 4).

In studies, it is stated that prevalence is difficult to evaluate because children are not aware of the disease and cannot express themselves sufficiently. Bruxism is considered a normal condition, as it is common in society. The family takes the child to a doctor when the child has a dental problem, the teeth-grinding sound disturbs the family members, the sleep is impaired and there is pain around the ear. The most reliable way to diagnose bruxism in children is information to be obtained from parents or caregivers. However, the problem is that children sleep away from these people at night, and children do not realize that they clench in the daytime [4–6].

According to the studies, Bruxism is caused by the change in the neurotransmission of dopamine in response to the motor stimulation to the central nervous system with the effect of stress and anxiety. Bruxism seen in children differs physiologically. In bruxism, the level of dopamine increases in the brain until adolescence, and after reaching the highest level, it decreases continuously until the age of 30. Therefore, there is a difference between adults and children. However, studies on bruxism and anxiety in children are still insufficient [4,7].

The ratio of anxiety disorder in all childhood diseases constitutes 2.5–5% (Spence, Mc Donald and Ingram, 2001). In studies, it is reported that the prevalence of anxiety disorders in the pre-school period is between 10 and 20% (Whalen, Sylvester, Luby, 2017). In our study, this rate was 12.5% in healthy children and 82% in children with bruxism.

Peripheral nervous system factors such as stress, anxiety, and personality traits have been reported in many studies to be effective in bruxism [8,9]. Most researchers acknowledge that bruxism develops as a response to anxiety and stress [10]. Lobezoo and Kampe reported that stress, anxiety and personality traits are included in the etiology of bruxism and that a high level of anxiety is observed in a group of individuals with bruxism. In a similar study, Vanderas et al. found that stress and anxiety are directly related to bruxism [11–13].

In studies conducted with children, it is stated that anxiety disorders are the most common type of psychiatric diseases in all age groups and the symptoms usually start in the preschool period (Whalen, Sylvester and Luby 2017). Dougherty [14] and Angold (2006) found the prevalence of anxiety in preschool children to be 9–19%. In early childhood, anxiety prevalence, persistence and course have been reported to be similar to older children, but it has been found that it is more possible to direct the course of anxiety disorders encountered in early childhood (Egger and Angold, 2006). It has also been reported that anxiety symptoms may be subtypes of some behavioral disorders in the preschool period (Gullone, Chorpita, 2002).

5. Conclusion

Otalgia in children can also occur due to many important diseases other than the ear's own disease. Most of the time, children with ear pain are given symptomatic treatment and research is not performed when the discomfort does not improve. There may be a psychological disease such as anxiety under the symptom of otalgia. It is inevitable that the effects of psychological factors experienced in childhood will continue in adulthood. Otalgia in children can be an early symptom of anxiety. Early diagnosis and treatment of anxiety, which poses a great risk for the future mental health of children, is very important. Thus, prevention studies can be carried out together with the treatment that started with early diagnosis. This study of anxiety in children with bruxism related to otalgia may be a guide for other studies.

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