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Association between hypertelorism and nonsyndromic oral clefts

Luciano Sólia Nasser[1], Letízia Monteiro de Barros[2], Daniella Reis Barbosa Martelli[1], João Vitor Quadros Tonelli[3], Mário Sérgio Oliveira Swerts[2], Hercílio Martelli Júnior[1,2,3]

[1] Health Science Program, State University of Montes Claros, Unimontes, Montes Claros, Minas Gerais State, Brazil.

[2] Center for the Rehabilitation of Craniofacial Anomalies, José do Rosário Vellano University, Alfenas, Minas Gerais, Brazil.

[3] Dental School, State University of Montes Claros, Unimontes, Montes Claros, Minas Gerais State, Brazil.

Corresponding author:
Hercílio Martelli Junior
Street Walter Ferreira Barreto, 57-
Zip Code: 39401-347
Montes Claros, Minas Gerais, Brazil
E-mail: hmjunior2000@yahoo.com
Tel: + 55 38 91325452

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Letter to the Editor

Hypertelorism is characterized by the increased distance between the orbits, measured from the most medial portion of its inner walls[1]. It represents a signal found in several craniofacial defects, and oral clefts[2]. Nonsyndromic oral clefts (NOC) are the most common orofacial birth defect, occurring in 1 in 500-2,500 live births worldwide[3]. NOC is caused by a complex interplay between environmental exposures and genetic factors[3].

The aim of the current study was to determine the frequency of hypertelorism in patients with NOC. With the proper approval of the Institutional Review Board, we have conducted a case-control study, containing 150 patients with NOC and 206 controls. NOC patients were recruited in the Craniofacial Anomalies Center of Alfenas, Brazil and healthy controls were randomly obtained from the General Clinics at the University.

Patients with NOC were divided into 3 groups: cleft lip and palate (CLP), cleft lip (CL), and cleft palate (CP). All patients underwent examination with the measurements of orbital distances with a millimeter rigid ruler in primary position. The measurement of the distance between the outer corners and inner corners of the eyes were obtained. After obtaining the measurements, the canthal index (C) was

calculated, result of the ratio between the value of inner canthal distance (IC) for external canthal distance (EC) and multiplied by 100 (C=IC/ EC X 100). The hypertelorism diagnosis was reached when a value greater than or equal to 48 was obtained (Cohen et al.[4], 1995). The data was digitilized using SPSS® (*Statistical Package for Social Science*) version 20.0. The *t*-test and chi-square test assessed respectively whether the age and gender for the two groups were statistically different from each other, with a significance level of 5%.

The average age of the patients diagnosed with NOC was 22.30 years and control group was 24.77 years. The proportion between men and women in the NOC group was 56.67% and 43.33%, respectively and control group was 45.63% and 54.37%, respectively ($p>0.05$). From the 150 patients with NOC, 86 (57.33%) were diagnosed with CLP, 39 (26%) with CL and 25 (16.66%) with CP. The canthal index average in the case group was 33.60, while the control group was 40.18. The average canthal index in patients with CLP was 34.07, followed by CL (32.89) and CP (31.84) ($p>0.05$).

In the present study, the frequency of hypertelorism in patients with NOC was not significantly increased in comparison with the control group. In another study, individuals with NOC exhibited a tendency toward mild hypertelorism, driven primarily by an increase in intercanthal distance. This tendency was not seen in patients with CL or isolated CP[5]. Since the 1960s, multiple studies have reported a tendency toward hypertelorism in individuals with NOC. However, the association between specific cleft types and increased interorbital distance has been inconsistent.

Investigating the relationship between hypertelorism and NOC is important. Studies with larger samples and molecular analyses are needed to better understand the possible relationships in the etiology of hypertelorism and NOC.

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