MedicalXpress

Families of orofacial clefting not at higher risk for dental anomalies

June 16 2015

Today, the International and American Associations for Dental Research (IADR/AADR) published a study titled "Spectrum of Dental Phenotypes in Nonsyndromic Orofacial Clefting," which is the largest international cohort to date of children with nonsyndromic clefts, their relatives and controls. This study is published in the OnlineFirst portion of the *Journal of Dental Research*: the journal for dental, oral and craniofacial research and a companion podcast is also available for download. This paper is an Editor's Choice paper that provides limited 30 day free access.

Children with oral clefts show a wide range of dental anomalies, adding complexity to understanding the phenotypic spectrum of orofacial clefting. The evidence is mixed however on whether the prevalence of dental anomalies is elevated in unaffected relatives, and is mostly based on small samples. This study by researchers Brian J. Howe, Margaret E. Cooper, Alexandre R. Vieira, Seth M. Weinberg, Judith Resick, Nichole Nidey, George L. Wehby, Mary L. Marazita and Lina Moreno Uribe characterizes the spectrum of cleft-related dental anomalies and evaluates whether families with clefting have a significantly higher risk for such anomalies compared to the general population. A total of 3,811 individuals were included with the breakdown being 660 cases with clefts, 1,922 unaffected relatives and 1,229 controls.

Dental anomalies were identified from in-person dental exams or intraoral photographs, and case-control differences were tested using Chi Square statistics. Cases had higher rates of dental anomalies in the maxillary arch than controls for primary and permanent dentitions but

not in the mandible. Dental anomalies were more prevalent in cleft lip with cleft palate than other cleft types.

More anomalies were seen on the same side of the cleft. Failure of tooth formation and tooth displacements were the most common dental anomalies found in cases. Compared to controls, unaffected siblings and parents showed a trend for increased anomalies of the maxillary permanent dentition. Yet, these differences were non-significant after multiple-testing correction, suggesting genetic heterogeneity in some families carrying susceptibility to both overt clefts and dental anomalies.

Collectively, the findings suggest that most affected families do not have higher genetic risk for dental anomalies than the general population and that the higher prevalence of anomalies in cases is primarily a physical consequence of the cleft and surgical interventions.

More information: This study is available online at jdr.sagepub.com/content/early/recent

Provided by International & American Associations for Dental Research