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Report of Abstracts

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Tracing back a modern dental disease: a severe case of Molar Incisor Hypomineralisation (MIH) in an Imperial Roman Child (Isola Sacra, 1st-3rd century AD)

Content

Molar Incisor Hypomineralisation (MIH) is a pathological condition caused by a qualitative alteration in the mineralization process of dental enamel and currently occurs in about 13% of the world's population. Although its etiology is still unknown, it is believed that systemic prenatal diseases, vitamin deficiencies and metabolic imbalances could be involved. To date, a few studies have reported possible cases of MIH in ancient populations according to modern diagnostic criteria, but due to its complexity this anomaly remains largely undiagnosed, misdiagnosed or confused with taphonomic processes.

This study presents an ancient case of severe MIH identified in the in situ mandibular dental remains of an Imperial Roman child (SCR 6302) from the Isola Sacra necropolis (Portus Urbis Romae, Latium, 1st–3rd century AD), employing a comprehensive approach that integrates modern clinical classification methods, X-rays imaging (XRM) techniques and histomorphometric analysis.

MIH-induced lesions were detected in the second deciduous molars, manifested as a collapse of the occlusal surface with exposure of the dentine. XRM analysis revealed an early stage of pathology, evidenced by marked enamel hypoplasia in the first permanent molar and the presence of secondary caries on the first deciduous molar. Following histomorphometric analysis, the age at death was set at 2.5 years and the onset of MIH was circumscribed to the first months of life, thus highlighting the presence of non-specific physiological stresses in the pre- and postnatal enamel portion.

Through a multidisciplinary approach, the present study reports a confirmed case of severe MIH in an ancient population, revealing an earlier occurrence than typically reported in modern cases. Furthermore, it is suggested that the development of MIH may be driven by common or similar aetiological factors present in both past and contemporary populations, offering novel insights into the pathological processes underlying this condition.

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