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LETTER TO EDITOR

Developmental defects of enamel as a bridge between medicine and dentistry

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ABSTRACT

Developmental defects of enamel (DDEs) are permanent disturbances of enamel formation reflecting systemic insults during prenatal, perinatal, and early childhood periods. Although managed within dentistry, their systemic background is often overlooked in medical care. This letter addresses the gap between medicine and dentistry in evaluating early-life conditions and asks whether DDEs should be reconsidered as part of a child's medical history rather than isolated dental findings. We argue that limited interprofessional communication contributes to delayed prevention and fragmented follow-up. Focusing on pregnancy and early childhood, we call for a multidisciplinary medical–dental approach to strengthen integrated child healthcare.

Keywords: Developmental defects of enamel, Pregnancy, Early childhood, Interprofessional collaboration, Oral health

ÖZET

Gelişimsel mine defektleri: tıp ve diş hekimliği arasında bir köprü

Gelişimsel mine defektleri (GMD), prenatal, perinatal ve erken çocukluk dönemlerinde ortaya çıkan sistemik etkileri yansıtan, mine oluşumundaki kalıcı bozukluklardır. Klinik olarak sıklıkla diş hekimliği kapsamında ele alınmalarına karşın, sistemik arka planları tıbbi bakımda çoğu zaman göz ardı edilmektedir. Bu mektup, erken yaşam dönemine ait sistemik durumların değerlendirilmesinde tıp ve diş hekimliği arasındaki boşluğu ele almakta ve GMD'lerin izole dental bulgular yerine çocuğun tıbbi öyküsünün bir parçası olarak değerlendirilmesini tartışmaktadır. Sınırlı meslekler arası iletişimin gecikmiş koruyucu yaklaşımlara ve parçalı izleme yol açtığını savunuyoruz. Gebelik ve erken çocukluk dönemine odaklanarak, çocuk sağlığını güçlendirmek için multidisipliner bir tıp–diş hekimliği yaklaşımı çağrısında bulunuyoruz.

Anahtar Kelimeler: Gelişimsel mine defektleri, Gebelik, Erken çocukluk, Meslekler arası iş birliği, Ağız sağlığı

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Dear Editor-in-Chief,
Recent years have witnessed an increasing emphasis on patient-centered and integrated healthcare, particularly in the fields of maternal and child health. Preventive strategies, early risk identification, and interprofessional collaboration are now central components of contemporary clinical and public health discourse [1,2]. However, within this evolving framework, oral manifestations of early-life systemic conditions—most notably developmental defects of enamel (DDEs)—remain largely overlooked. This raises a critical question: should DDEs continue to be regarded as isolated dental findings, or should they be reconsidered as integral components of a child's medical history?
Developmental enamel defects are permanent disturbances of enamel formation that reflect systemic insults occurring during prenatal, perinatal, and early childhood periods. Because enamel does not remodel, these defects represent enduring biological records of disturbances during critical windows of development [3–5]. Despite this well-established biological basis, the clinical management of DDEs is still predominantly confined to dentistry, with limited integration into medical follow-up or preventive care pathways [1,2].
We argue that this separation represents a missed opportunity in patient-centered healthcare. Obstetricians, pediatricians, neonatologists, and family physicians are uniquely positioned to identify children exposed to systemic conditions known to interfere with enamel formation [4,6,7]. Yet, in routine practice, the absence of structured communication, shared clinical frameworks, and clearly defined referral pathways between medical professionals and oral health professionals, particularly pediatric dentists mean that this information rarely translates into proactive dental monitoring or early preventive interventions [1,2].
From this perspective, DDEs should be viewed not merely as dental anomalies but as potential indicators of cumulative systemic stress during pregnancy and early childhood [3–7]. Recent literature has further reinforced this view by framing DDEs as biological markers of early-life adversity rather than isolated dental findings [8,9]. Recognizing DDEs in this way may enhance risk stratification, contextualize oral findings within broader health trajectories, and support more comprehensive long-term follow-up for affected children. Clinical evidence from children with chronic systemic diseases, such as chronic kidney disease, further supports this integrated perspective [10].
A multidisciplinary and interprofessional approach is therefore essential for the effective management of DDEs. Collaboration between medical and dental professionals has the potential to facilitate early identification of at-risk populations, enable timely preventive strategies, and promote individualized care planning [1,2,11]. In particular, systematic documentation and sharing of relevant prenatal and early childhood medical events—such as prolonged hospitalization, chronic systemic illness, or significant pharmacological exposure—could provide critical context for dental assessments and guide preventive decision-making [1,2].
Importantly, this discussion is timely. As healthcare systems increasingly prioritize integrated care models, the continued exclusion of oral developmental outcomes from maternal and child health frameworks represents a conceptual and practical gap [1,2]. Addressing this gap now may contribute not only to improved oral health outcomes but also to a more holistic understanding of child health and development.
In conclusion, DDEs offer a tangible opportunity to strengthen the bridge between medicine and dentistry. Reframing these defects as shared concerns rather than discipline-specific findings may support earlier intervention, improved preventive care, and more genuinely integrated, patient-centered healthcare.

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