©Operative Dentistry, 2016, **41-6,** 672-674

Letter To The Editor

Dear Editor,

We read with great interest the following manuscripts published in the *Operative Dentistry*: Carvalho LD, Bernardon JK, Bruzi G, Andrada MAC & Vieira LCC (2013) Hypoplastic enamel treatment in permanent anterior teeth of a child 38(4) 363-368 and Reston EG, Corba DV, Ruschel K, Tovo MF & Barbosa AN (2011) Conservative approach for esthetic treatment of enamel hypoplasia 36(3) 340-343. We want to personally thank the authors for writing such great clinical papers. While they are generally well written case reports, we have concerns about this articles that needs to be addressed.

1. We disagree with the diagnostic provided by both authors. Developmental defects of enamel are classified in quantitative (hypoplasia) or qualitative (diffuses/demarcated opacities) alterations, based on their macroscopic appearance.[1] Disturbances during the maturation stage of amelogenesis result in opacities and the defect involving an alteration in the translucency, vary in degree. Hypoplasia results of disturbances during the secretion stage of amelogenesis and the defect is associated with a reduced localized thickness.[1-2] Therefore, the figures in the manuscripts show an enamel with demarcated opacities, not a hipoplastic enamel.

2. Our suggestion is to revise the differential diagnosis. The presented images may characterize a condition known as Molar-Incisor Hipomineralization (MIH), a genetic alteration related to disturbances in the maturation stage of enamel[3], not considered in the cited case reports. MIH is a qualitative defect of enamel that affects permanent first molars, with or without the involvement of permanent incisors[4]. The defects range from white-yellow or yellow-brown demarcated opacities to hypomineralised desintegrated enamel[4].

We hope these considerations will be addressed.

Sincerely,

Marina de Deus Moura de Lima, Heloísa Clara Santos Sousa & Lúcia de Ftima Almeida de Deus Moura
Department of Pathology and Dentistry Clinic, School od Dentistry, Universidade Federal do Piauí - UFPI, Teresina, Brazil

1. Federation Dental International (1992) A review of the developmental defects of enamel index (DDE Index) - Commission on Oral Health, Research & Epidemiology: Report of an FDI Working Group *International Dental Journal* **42** 411-426.
2. Hu JC, Chun YH, Al Hazzazzi T & Simmer JP (2007) Enamel formation and amelogenesis imperfecta *Cells Tissues Organs* **186(1)** 78-85.
3. Vieira AR & Kup E (2016) On the Etiology of Molar-Incisor Hypomineralization *Caries Research* **50(2)** 166-169.
4. Weerheijm KL, Jalevik B & Alaluusua S (2001) Molar-incisor hypomineralisation *Caries Research* **35** 390-391.

Response from the Authors

Dear Editor Dr. Platt and Doctors Marina de Deus Moura de Lima, Heloísa Clara Santos Sousa & Lúcia de Fátima Almeida de Deus Moura,

I would like to thank the interest and suggestions on our manuscript, published in 2013, entitled "Hypoplastic enamel treatment in permanent anterior teeth of a child "(1)

The diagnosis provided for the clinical case reported was based on the characteristics of the lesions on the teeth submitted to the treatment, considering mainly the origin of the lesion (trauma of the deciduous teeth during the enamel mineralization of the permanent teeth) and following other published papers showing similar lesions. (2,3) However, we have to agree with some of the considerations suggested: in the case reported, the alterations were qualitative and affected basically the degree of opacity. Considering there was no structure loss and according to the Developmental Defects of Enamel (DDE) index, should be classified as demarcated opacities instead of hypoplastic spots. (4–6)

Even with the possibility of a misdiagnosis, it was clear that was not a case of Molar-incisor Hypomineralization (MIH) as suggested (7–9), once the lesions etiology was detected in the patient medical-dental history (trauma) and clinical evaluation, which showed that the molars were not affected.

We also would like to clarify that, even if the stains had received a different classification, the treatment conducted to the altered enamel, with previous dental bleaching for the reduction of the brownish characteristic of the lesions, in function of the lesions depth, followed by the composite restoration, would be kept, considering that "esthetic" was the determinant factor for the decision of restoring the teeth.

Based on that, we are sure this discussion will be able to contribute to an improvement in the scientific approach of the paper.

Sincerely,

Dr. Luana Dutra de Carvalho and co-authors

1. Carvalho LD, Bernardon JK, Bruzi G, Andrada M a. C, Vieira LCC. Hypoplastic enamel treatment in permanent anterior teeth of a child. Oper Dent. 2013 Aug;38(4):363-8.
2. Bernardon JK, Gondo R, Baratieri LN. Minimally invasive restorative treatment of hypoplastic enamel in anterior teeth .pdf. Am J Esthet Dent. 2011 Fall;1(1):1-24.
3. Reston E, Corba D, Ruschel K, Tovo M, Barbosa A. Conservative Approach for Esthetic Treatment of Enamel Hypoplasia. Oper Dent. 2011 May 1;36(3):340-3.
4. Wong HM. Aetiological factors for developmental defects of enamel. 2014 [cited 2016 Jul 4]; Available from: http://hub.hku.hk/handle/10722/200426
5. Seow WK. Clinical diagnosis of enamel defects: pitfalls and practical guidelines. Int Dent J. 1997 Jun;47(3):173-82.
6. A review of the developmental defects of enamel index (DDE Index). Commission on Oral Health, Research & Epidemiology. Report of an FDI Working Group. Int Dent J. 1992 Dec;42(6):411-26.
7. Weerheijm KL. Molar incisor hypomineralisation (MIH). Eur J Paediatr Dent Off J Eur Acad Paediatr Dent. 2003 Sep;4(3):114-20.
8. Hysi D, Kuscu OO, Droboniku E, Toti C, Xhemnica L, Caglar E. Prevalence and aetiology of Molar-Incisor Hypomineralisation among children aged 8-10 years in Tirana, Albania. Eur J Paediatr Dent Off J Eur Acad Paediatr Dent. 2016 Mar;17(1):75-9.
9. Silva MJ, Scurrah KJ, Craig JM, Manton DJ, Kilpatrick N. Etiology of molar incisor hypomineralization - A systematic review. Community Dent Oral Epidemiol. 2016 Apr 28;

Dear Editor Dr Platt,

First of all, we thank our colleagues, Dr Marina de Deus Moura de Lima, Dr Heloísa Clara Santos Sousa, and Dr Lúcia de Fátima Almeida de Deus Moura, for their interest and qualified comments on our paper (1).

In response to their comments, we hereby offer clarifications as follows.

1. Even though the scope of our study was to describe a minimally invasive technique for the removal of intrinsic enamel stains and enamel discoloration, the terminology used to describe the clinical findings is in line with the relevant literature. The references quoted by the readers in their letter and in our original paper clearly use the same terms to describe the clinical features of the developmental defects addressed in the case report.

Figure 1 shows the anterior teeth (incisors and canines), evidencing a defect associated with reduced localized thickness, characterizing hypoplasia. Even though tooth # 9 shows a greater area of diffuse opacity, we chose to classify both this tooth and tooth # 8 as presenting hypoplasia, because this pathology was the most relevant one in that situation (2,3).

Hypoplasia is shown in detail and enlarged in Figure 1, as can also be seen in the original report.

2. With regard to the differential diagnosis of molar-incisor hypomineralization (MIH) for our case, we highlight the unequivocal involvement of the canine (tooth # 6) in the process behind the systemic abnormalities that affected tooth development.

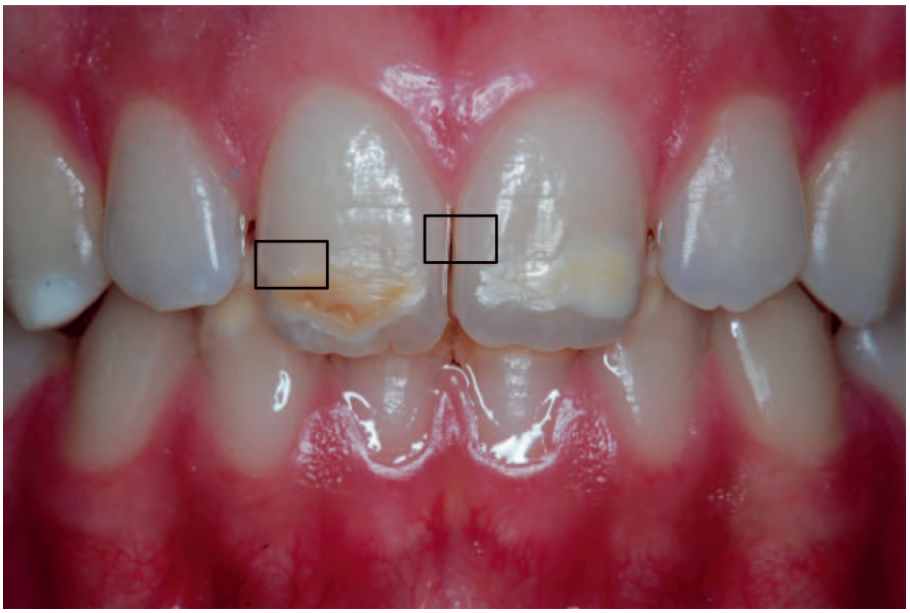

Figure 1. *Areas with hypoplastic characteristics in the patient's anterior teeth.*

There are very rare indications in the literature suggesting that canines could be involved in cases of MIH (4), as the processes of matrix apposition and mineralization in molars, incisors, and canines are not totally simultaneous. We believe that, in our case, canine involvement rules out the diagnosis of MIH.

Still regarding this differential diagnosis, when searching the PubMed database using the keywords molar incisor hypomineralization and MIH, we found that 75% of the papers available are dated 2010 or later. This fact, combined with the other arguments here presented, may suggest that at the time of publication of our original report (2011), the diagnosis of MIH was restricted to very specific cases, and therefore this condition was not included in the literature review conducted at the time. Still, it is relevant to note that the technique described in our report is one option among the treatment possibilities applicable to MIH (5).

Finally, while we acknowledge the importance of a standardized nomenclature for defects resulting from odontogenic abnormalities, it is important to mention that it was not the primary objective of the study to detail the etiology of the case. The conciseness required when writing case reports also contributed to our focus on the treatment technique described.

EG Reston
DDS, MSD, PhD, School of Dentistry, Professor and Head of the Graduate Program, Lutheran University of Brazil, Canoas, Brazil

MF Tovo
DDS, MSD, PhD, School of Dentistry, Associate Professor, Lutheran University of Brazil, Canoas, Brazil

References

1. Reston EG, Corba DV, Ruschel K, Tovo MF, Barbosa AN (2011) Conservative approach for esthetic treatment of enamel hypoplasia *Operative Dentistry* **36(3)** 340-343.
2. World Health Organization (1997) *Oral health surveys: basic methods* 4th ed WHO, Geneva.
3. Federation Dental International (1992) A review of the developmental defects of enamel index (DDE Index) - Commission on Oral Health, Research & Epidemiology: Report of an FDI Working Group *International Dental Journal* **42(6)** 411-426.
4. Bhaskar S, Hegde S (2014) Molar-incisor hypomineralization: prevalence, severity and clinical characteristics in 8- to 13-year-old children of Udaipur, India *Journal of the Indian Society of Pedodontics and Preventive Dentistry* **32(4)** 322-329.
5. William V, Messer LB, Burrow MF (2006) Molar incisor hypomineralization: review and recommendations for clinical management *Pediatric Dentistry* **28(3)** 224-232.