

Book Review

Dental erosion: from diagnosis to therapy

A. Lussi, editor.

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Dental erosion is the chemical wear of dental hard tissue by a process that does not involve bacteria. As such, erosion is not a new disease but one that has been recognized for more than 50 years. What is new is the increasing realization in various parts of the world of an apparent increasing prevalence of tooth wear, especially erosion. As with any 'new' disease, the increasing prevalence may in part be a result of an increased awareness of the condition by clinicians. A book on the subject of dental erosion is, therefore, timely and welcome. This book is one of the series of *Monographs in Oral Science* published by Karger and comprises 13 chapters each by one or more of 14 contributors covering the background to the subject, its diagnosis, prevalence, aetiology, methods for assessment, prevention and treatment.

There are obvious advantages in having a number of expert authors to contribute to a book of this nature. In particular, the reader can expect up-to-date material and detailed information over the whole range of topics covered. Unfortunately, in this case this has resulted in stylistic and linguistic inconsistencies that often make this a difficult book to read.

Tooth wear is described as a 'normal' or physiological phenomenon resulting from the daily functioning of teeth. Defining the moment when this wear becomes a sign of disease is rightly presented as a major diagnostic problem. On page 15 the conclusion that 'dental erosion is best described as a condition brought upon by an acid insult, with the acid being of nonpathological origin' is reached. This reviewer doubts that refluxed gastric acid, a potent cause of dental erosion in a patient with reflux disease, could be classified as 'non-

pathological'. Moreover, it is fair to assume that acidic soft drinks are not sold, or even consumed, with the intention of being 'pathological' but the resulting dental erosion is undoubtedly a disease. As with sugar, it is the quantity and the pattern of consumption that sets the disease process in motion.

The interaction between the different forms of tooth wear is well described. Very useful data on prevalence, distribution and incidence of erosion from numerous studies have been collected together into helpful tables. Interestingly, erosion on labial surfaces of upper incisor teeth appears to be common in several studies from Switzerland, while this is rarely seen in patients examined by this reviewer. Geographical variations in affected teeth may indeed occur and this might be linked to differences in the apparently common aetiological factors.

The chemistry of dental erosion is dealt with in a detailed but clear and concise chapter that leads into a group of five sub-chapters covering the extrinsic causes of erosion. In these sub-chapters, the complex interplay of acidic foodstuffs, especially drinks, with dental tissues and saliva are discussed in detail. The function of salivary pellicle as a protection against erosion is well described, as is the possibility of supplementing soft drinks with calcium in order to reduce their erosive potential. Behavioural factors may influence dental erosion and the conundrum that lifestyle factors generally regarded as healthy, such as eating fruits and raw vegetables as well as engaging in certain sporting activities, may in fact play a part in the causation of dental erosion. Those with a preference for an unhealthy lifestyle should not take comfort in this as high consumption of soft drinks, alcopops and certain illicit drugs can also contribute to dental erosion. The problems of orally administered acidic medicines and acid challenges in the mouths of patients with xerostomia are well described.

It has been known for many years that patients with gastric reflux may present with dental erosion. Not all patients with gastric reflux disease,

however, actually present with dental erosion. The interplay of risk factors and protective influences is undoubtedly complex and this is well covered in a very thorough chapter on the intrinsic causes of dental erosion. It would have been helpful to include a comment on the other types of tooth wear that frequently occur in patients with reflux disease once the very tissue destructive erosive wear has begun. There are numerous problems in the clinical assessment of dental erosion such as determining when the problem has started and, subsequently, whether erosion is active or stabilised. As yet there are no tests or measurements that meet the needs of the clinician aiming to make a reliable diagnosis of the state of erosion and formulate a treatment plan. Much useful information of the current situation is given in chapter 10.

Treating dentine hypersensitivity resulting from erosion, assessing the risk of erosion and instituting preventive measures for patients are competently dealt with in chapters 11 and 12. One important preventive measure that is not, however, given due prominence in chapter 12, although touched on elsewhere in the book, is the need for manufacturers of soft drinks to consider seriously the chemical modification of soft drinks in order to reduce or eliminate their erosive potential. Current consumption patterns of erosive drinks in many parts of the world suggest that a continued rise in the prevalence of erosion is, otherwise, inevitable. Apart from the use of antacids or chewing gum to reduce

postprandial reflux, little information is presented concerning the treatment of gastric reflux disease or the minimizing of its symptoms.

With respect to the treatment of erosion, several authors note in their chapters the need for advances in dental materials, especially in adhesive systems. The final chapter of this book briefly describes restorative therapy for patients with dental erosion but this chapter would have benefited from more discussion on the treatment of severely eroded teeth such as is seen in patients with gastric reflux.

There are lists of references at the end of each chapter that give a summary of the published work in the field but these are, in several cases, less than exhaustive. In conclusion, this book presents much worthwhile information about dental erosion that will be of interest to clinicians, teachers and students. The field is rapidly developing as witnessed by the number of papers published since this book was written (over 400 papers listed in PubMed since 2005) and this book will help those new to the subject to obtain a ready understanding of it. A drawback is the lack of a homogeneous style that leaves several chapters or parts of chapters difficult to read and understand while other chapters are excellent.

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