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Monitoring erosive toothwear: BEWE, a simple tool to protect patients and the profession

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Key points

Highlights the importance of early identification of erosive tooth wear.

Discusses the role of preventative advice in patient management.

Suggests the use of the basic erosive wear examination (BEWE) in monitoring erosive tooth wear.

Abstract

Erosive tooth wear is the third most commonly observed oral condition after caries and periodontal disease, with a prevalence similar to that of dentine hypersensitivity. However, it is not a condition that is routinely screened, or monitored, as part of the standard dental examination. Following a meeting held in 2018, this paper considers the outlook for erosive tooth wear and the need for dental professionals to monitor for signs of the condition as part of an oral health assessment, to provide protection for patients and the profession. The use of the basic erosive wear examination (BEWE) is proposed as a simple screening tool designed to detect erosive tooth wear in clinical practice.

Introduction

Erosive tooth wear is now the third most commonly observed oral condition, after caries and periodontal disease, with a prevalence similar to that of dentine hypersensitivity. However, it is not a condition that is routinely screened or monitored as part of the standard dental examination.

Increasing expectations of patients and the public mean that there is an increased risk of dissatisfaction and litigation. There is still so much that is unknown about erosive

tooth wear, and while the condition tends to have a slow rate of progression, the potential impacts are far reaching. Little is known about its progression. For some, this means a slow gradual progression but for others it undergoes rapid change and can compromise the longevity of the dentition. Added to which, it is a condition that often affects the 'committed' patient, as it is not triggered by a lack of oral hygiene or high levels of plaque. As increasing numbers of patients retain natural teeth for longer, we are likely to see an increase in the prevalence of signs of tooth wear.

Unlike other common conditions, which may be monitored as part of an oral health assessment, the initial stages of tooth wear do not require chairside intervention. The role of the dental professional is to highlight the condition and support the patient in the management of risk factors, including diet and the management of intrinsic factors such as acid reflux.

Outlook for erosive tooth wear

With modern lifestyles and an ageing population it is inevitable that erosive tooth wear will continue to feature in future patient populations. According to the most recent *Delivering better oral health* guidance, over three quarters (77%) of adults have some tooth

wear and the greatest increase in moderate tooth wear was seen among young adults.¹ The increased mobility of younger generations to move for work or study may also impact care. The reduction in the consistent patient-practitioner relationship may make it more difficult to spot a slowly progressing condition, such as erosive tooth wear.

Full mouth rehabilitation of erosive tooth wear is expensive and time consuming. According to a study by O'Toole *et al.*, costs could be up to £13,000 for private treatment on average and treatment could take up to 24 months.² It is important that patients are made aware of the condition at the earliest stage, ideally before it reaches the need for restorative intervention. In an increasingly litigious society, it is important that the patient realises that progression of the condition is dependent on their behaviour and not an oversight of the healthcare provider.

Examination for erosive toothwear should be part of a routine oral health assessment. A regular and consistent approach means that the dentist or other oral healthcare provider routinely examines the teeth for tooth wear, informs the patient and, if identified, can commence prevention. Until this becomes routine, and part of the clinical examination, there is a risk that patients will continue to

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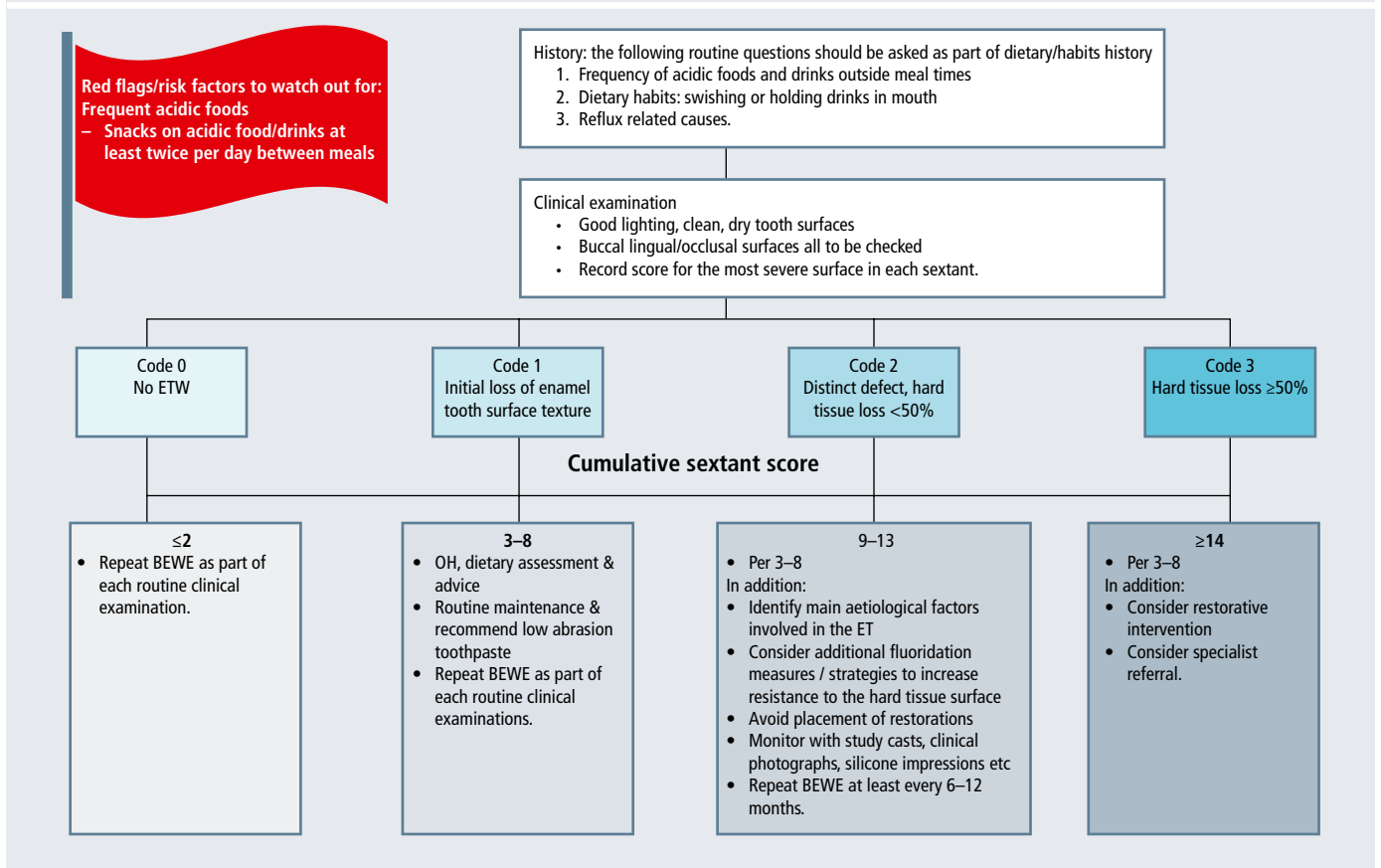
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Fig. 1 Introducing the BEWE as part of an oral health assessment



develop severe tooth wear, on occasion so damaging that the longevity of otherwise sound teeth is compromised.

A simple index to record erosive tooth wear

A group representing patients with erosive tooth wear, dental hygienists and dental therapists, the British Society of Dental Hygiene and Therapy (BSDHT), the Health and Science Committee of the BDA, the Faculty of General Dental Practice (UK), industry and the Erosive Toothwear Foundation (a charity targeted to improve understanding by patients, the public and dentists on erosive toothwear, see www.erosivetoothwear.com) met in December 2018 to discuss the need to record tooth wear as part of best practice during an oral health assessment. The group heard presentations on the use of the basic erosive wear examination (BEWE) in different contexts and the patient’s experience with visiting different dentists, with differing levels of emphasis placed upon their erosive tooth wear. Two separate studies showed that low numbers of experienced dentists are recording erosive tooth wear.³ Dentists who have undergone a simple re-training process or newly qualified dentists

are more likely to record it, highlighting a need for increased education and awareness.

There was agreement that the BEWE as a convenient way to record the severity of erosive tooth wear, had the greatest adoption and should therefore be the index of choice. It was designed specifically for clinicians working within the general practice environment as a means to record the erosive tooth wear severity in the clinical notes. Representatives felt, provided suitable arrangements were made to facilitate the process, that conducting the BEWE at the same time as the BPE would be ideal. As both indices are conducted in a similar manner and both record the most severe surface or site, it would ease the burden on the professional when performing a clinical examination. Using a sextant approach and recording scores in a combined table would improve uptake and reduce the demands on the professional.

From its inception in 2008, the BEWE has increasingly been adopted internationally, having been used in 96 peer-reviewed publications in over 34 countries to date. It is now the most widely used index for erosive tooth wear. The index was designed to mirror the BPE, using the same routine and a similar recording process. The most severely worn tooth

surface in each sextant is given a score from 0–3. Zero being no wear, 1 being early wear often with minimal surface effects, 2 is the loss of tissue affecting less than 50% of the surface, and 3 greater than 50%. For both grades 2 and 3 dentine is commonly exposed. All wear is scored regardless of the underlying aetiological agent. The relative reliability of grading score 3 is consistent and grade 2 is easier to recognise than zero or 1. Giving grade zero would normally be expected to be seen in newly erupted teeth found in adolescents but it is unlikely in adults, particularly those over the age of 25. The loss of mamellons and surface striae occurs in the first few years after eruption. As wear progresses it becomes more common to see more profound wear with the loss of enamel and sometimes exposure of dentine. Once significant wear occurs on teeth it becomes easier to recognise (Fig. 1).

In January 2019, the authors approached 18 dental schools in the UK with a simple questionnaire to understand how BEWE was taught, and 13 replied. Two schools did not teach any tooth wear index. Two taught only the use of the BEWE and six schools taught the BEWE alongside the Smith and Knight index. Two schools taught Smith and

Knight. Five schools recommended regularly recording tooth wear in the clinical notes using an index, and the majority advocated taking study models to monitor progression. These findings indicate that there is widespread acknowledgement that monitoring tooth wear is important clinically and the majority used the BEWE. Perhaps, in time, those currently using either no indices or other variants might want to consider exclusively using the BEWE.

Conclusion and further resources

There are not many conditions that affect 30% of the population that many healthcare professionals do not assess and try to prevent. The BEWE is a simple screening tool designed

to detect erosive tooth wear in clinical practice and can be used efficiently. Its use is advocated to protect the oral healthcare provider and the patient, as the prevalence and awareness of this condition increases.

During the meeting in December, the group reached a consensus to raise awareness of the need to monitor and document erosive tooth wear as part of oral health assessments. BEWE is becoming increasingly adopted, increasingly taught in dental schools, and is highlighted within the *Delivering better oral health* guidelines for patients at risk of erosive tooth wear. The group would like to propose it could form part of best practice oral health assessments. Resources and online training for learning the BEWE can be found at www.erosivetoothwear.com.

Conflict of interests

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