

Letters to the Editor

Factors affecting tooth wear

We read with interest, Professor Burke's comments about our research article, reporting on the performance of directly bonded resin composite restorations placed at an increased occlusal vertical dimension for the treatment of generalized tooth wear.¹ This research forms part of the overall Radboud Tooth Wear Project (RTWP), Radboudumc, Nijmegen, the Netherlands. In recent times, there has been much interest in the subject of tooth wear, especially given the known prevalence and impact of this condition on patients,²⁻⁴ and we are delighted to read about the Editor's interests in our work.

As part of the 2017, European Consensus Statement on the Management Guidelines for Severe Tooth Wear,⁵ when restorative intervention is indicated, a conservative and minimally invasive approach is recommended. Several studies have reported the performance of resin composite for the treatment of tooth wear; however, the data has been limited to relatively smaller sample sizes and/or shorter observation periods. Our study included a sample of patients with generalized moderate to severe tooth wear, where full mouth restorative treatment was indicated. In total, 1269 restorations were prescribed. Patients with potential risk factors for tooth wear such as severe bruxism or a marked gastro-oesophageal reflux, were not excluded. The patients were observed for a mean period of 62.4 months. With the relatively low annual failure rates reported (up to 2.2% and 2.9% for the anterior and posterior restorations, respectively)

as well as a low overall rate of catastrophic failure (2.3%), it was concluded that this approach was justified for the medium-term treatment of patients with generalized tooth wear. We do hope that the outcomes of our investigation may help colleagues develop a better understanding of this contentious subject area.

We would, however, like to draw attention to some salient points. Our study highlighted the need for regular maintenance and refurbishment; this should be carefully considered, especially for molar tooth restorations, while attaining informed consent. However, most remedial interventions were efficiently and effectively performed during the 1-, 3- and 5-year recall intervals, without the need for further appointments. Furthermore, many of the patients had failed to develop any awareness of the need for intervention, especially with minor chips. Treatments were performed by operators who were proficient with the restorative protocol. We hope our findings will help motivate colleagues to develop and enhance their skills with this form of minimum intervention dentistry.

In our study, a large number of the failures were observed among a small number of the participants. The precise reasons are unknown and may have been related to the individual's behaviour (where it would be logical to assume a patient with severe bruxist tendencies would be at a higher risk of destroying their restorations) and in these cases, factors such as operator skill and the impact of the materials on the survival of the restorations, may be of lesser importance. These outcomes support the need for further

investigations to help identify risk factors (to include the impact of the aetiology) to help improve the predictability of this additive approach for the rehabilitation of the worn dentition.

References

1. Mehta SB, Lima VP, Bronkhorst EM, Crins L *et al.* Clinical performance of direct composite resin restorations in a full mouth rehabilitation for patients with severe tooth wear: 5.5-year results. *J Dent* 2021; **112**: 103743. <https://doi.org/10.1016/j.jdent.2021.103743>.
2. Schlueter N, Luka B. Erosive tooth wear – a review on global prevalence and on its prevalence in risk groups. *Br Dent J* 2018; **224**: 364–370. <https://doi.org/10.1038/sj.bdj.2018.167>
3. Mehta SB, Loomans BAC, Banerji S *et al.* An investigation into the impact of tooth wear on the oral health related quality of life amongst adult dental patients in the United Kingdom, Malta and Australia. *J Dent* 2020; 103409. <https://doi.org/10.1016/j.jdent.2020.103409>
4. David Bartlett, Soha Dattani, Ian Mills *et al.* Monitoring erosive toothwear: BEWE, a simple tool to protect patients and the profession. *Br Dent J* 2019; **226**: 12; 930–932. <https://doi.org/10.1038/s41415-019-0411-7>
5. Loomans B, Opdam N, Attin T *et al.* Severe tooth wear: European consensus statement on management guidelines. *J Adhes Dent* 2017; **19**: 111–119. <https://doi.org/10.3290/j.jad.a38102>

Shamir B Mehta

Veronica Pereira de Lima

Bas AC Loomans

Department of Dentistry, Radboudumc, Nijmegen, the Netherlands

Historical note on the cover image

During the Victorian period, ceramic pots sealed with a transferred advertising lid were used by retailers in many English-speaking countries to package toothpastes and toothpowders. These pots, retrieved from former rubbish tips, have become highly collectable due to their variety and graphical appeal, as well as their historical significance. They clearly show the creativity and inventiveness of the skilled engravers who etched the copper plates to produce the transfers so these containers could be manufactured in large numbers. The resultant designs speak for themselves and include the development of new typefaces and intricately engraved pictorial scenes, comparable in quality to any other form of transfer-printed ware. More than 8000 species have been recorded. Pots with dental images, dentist or dental surgeon are quite rare. They also highlight the huge range of toothpaste flavours that were available just over a century ago. Cherry and areca nut were common, but other exotic-sounding flavours, such as tomato, orange and carbolic acid were offered to entice a growing middle-class population. Professional dentistry standards were still developing, and these lids provide an insight to the pioneering marketing techniques to market what today is an everyday item.

Further reading

Houghton RJ, Layden J, Taylor P. *Historical Guide to Advertising Pot Lids*. 2017. Available at: www.transferwarecollectorsclub.org/books/historical-guide-advertising-pot-lids (accessed November 2021).

Pynn B. *Canadian Advertising Pot Lids*. 2019. Available at: www.transferwarecollectorsclub.org/books/canadian-advertising-pot-lids (accessed October 2021).

Bruce Pynn

Chief of Dentistry, Thunder Bay Regional Health Services, Ontario, Canada

Radiological illusion at first sight: a case highlighting the importance of clinical correlation in radiographic interpretation

A 'bottle-like object' in the left pharyngeal space was noted as an incidental finding on one of the dental panoramic tomographs (DPT) present in the radiology archive at the Faculty of Dental Sciences, University of Peradeniya, Sri Lanka. At first glance, it gives the notion that this bottle was located within the pharynx (Figure 1). However, after retrieving the radiological request form from the records, it was found to have been incompletely filled out, which led to the tracing of the patient records. The clinical records revealed that this DPT belonged to a young male patient aged 29 years, who had undergone surgical treatment for temporomandibular joint ankylosis, and the radiograph was taken during the immediate post-operative period while he was an in-patient. This 'bottle-like object,' which appeared as a radiopaque artefact was due to a biopsy bottle that had been placed on top of pressure packing in order to give extra pressure to the surgical site.

With this case, we highlight several important aspects. Initially, the clinician could have either removed the biopsy bottle from the pressure dressing prior sending the patient to a DPT or could have made a note regarding the presence of a such in the request form. Secondly, it is a responsibility of the radiographers to also check patients, and advise them to remove any object present in the area of interest that may appear on the radiograph as an artefact. Nevertheless, this fact may have overlooked as the dressing may have masked the presence of a bottle.

Belgan *et al* reported that the prevalence of foreign objects in DPTs was 12.5%, and is deemed significant.¹ Hettiarachchi *et al*, in clinical audit at the Dental Teaching Hospital, Peradeniya, found that out of 1000 radiological request forms, 61.1% had been incompletely filled and in 53.9%, the clinical details were not included.² This case is a good example of the result of an incompletely filled radiological request form. Further, we would like to emphasize that it is the responsibility of the clinician to fill the radiology request form, including all relevant clinical details in order to assist the radiographer/radiologist and to prevent any diagnostic dilemmas.

This case point outs the importance of clinical correlation in radiology to avoid an artefact being overlooked and the technical aspects of proper patient checking and preparation prior to taking a DPT.

References

1. Aktuna Belgin C, Serindere G. Evaluation of error types and quality on panoramic radiography. *Int Dent Res* 2019; **9**: 99–104. <https://doi.org/10.5577/intdentres.2019.vol9.no3.2>.
2. Hettiarachchi PVKS, Seneviratne DPVKW, Jayasinghe RD. An audit to assess the completion of dental radiology request forms in the Dental Teaching Hospital, Peradeniya. *Sri Lanka Dental Journal* 2017; **47**: 3–9.

C Gunasena, Lecturer (Probationary) in Oral Medicine and Radiology)

PVKS Hettiarachchi, Senior Lecturer in Oral Medicine and Radiology, Consultant Maxillofacial Surgeon

RD Jayasinghe, Chair Professor in Oral Medicine and Radiology, Consultant Maxillofacial Surgeon,

Department of Oral Medicine and Periodontology, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka

Stress and the HPA axis

We enjoyed the recent article 'The inevitability of change: the place for mindfulness and compassion in dentistry'.¹ It provided insight into mindfulness tools that can be used to alleviate stress. It is undeniable that the COVID pandemic has presented healthcare professionals with additional pressures, inevitably leading to increased stress levels. It was particularly interesting to read that mindful practices activate specific areas of the brain.

Figure 2 outlines the hypothalamic–pituitary–adrenal (HPA) axis,¹ and shows that the pituitary gland releases adrenaline. This is not the case. The anterior pituitary has a role in the humoral mediation of stress by adrenocorticotrophic hormone (ACTH), but not adrenaline.

The HPA axis was first proposed by Hans Selye, a pioneering endocrinologist.² Stressful stimuli cause the hypothalamus to secrete

corticotropin-releasing hormone (CRH) which stimulates the anterior pituitary gland to release adrenocorticotrophic hormone (ACTH) into the bloodstream. ACTH stimulates the secretion of cortisol from the adrenal cortex, the outermost layer of the adrenal gland located on the kidneys. This causes a number of reactions in the body that enable us to deal with stress. When cortisol levels are high, the hypothalamus and anterior pituitary gland stop producing CRH and ACTH, respectively, to inhibit further cortisol secretion. This is an example of a negative feedback loop. Adrenaline and noradrenaline are secreted from the adrenal medulla in the body's response to stress.

It is important to acknowledge the harmful effects that long-term stress has on our bodies. Implementing mindfulness practice is a positive way of reducing stress in daily life. We agree with the authors that dentists are subjected to many external and internal stressors. As clinicians in a busy maxillofacial unit, we often find ourselves in stressful situations. The 'STOP' technique described by the authors in particular has much to offer.

We thank the authors for bringing discussions about stress and stress management into the dental forum.

References

1. Seager L, Atkinson K. The inevitability of change: the place for mindfulness and compassion in dentistry. *Dent Update* 2021; **48**: 435–440.
2. Selye H. *Stress without Distress*. Philadelphia: Lippincott, 1974.

Faye Doughty, OMFS Dental Core Trainee
Gary Cousin, OMFS Consultant
Oral and Maxillofacial Department, East Lancashire Teaching Hospitals

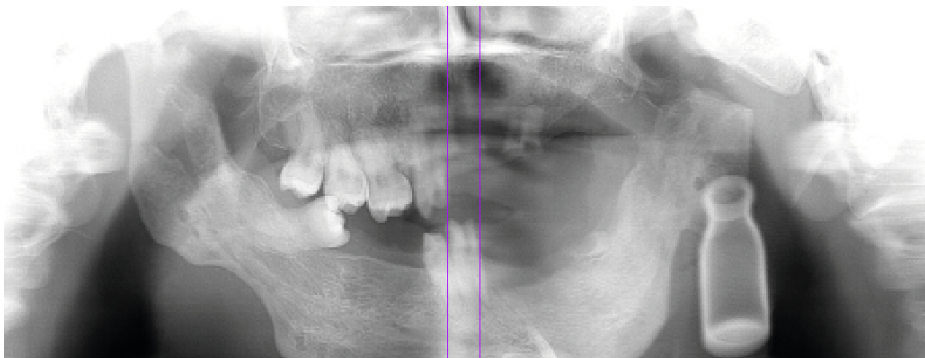


Figure 1. DPT showing bottle-like artefact on the left side..