

Letters to the editor

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Water fluoridation

Dental fluoride policy in Japan

Sir, with regard to your recent content on toothpaste advertising,¹ there are two types of chemicals: controlled chemicals for our good health and reduced chemicals for our bad health. The Centers for Disease Control and Prevention (CDC) clearly stated that wide-spread use of fluoride has been a major factor in the decline in the prevalence and severity of dental caries in the United States and other economically developed countries.² The World Health Organisation (WHO) has also asserted that the use of fluoride is a major breakthrough in public health.³ However, in Japan, fluoride in drinking water is regulated to be less than 0.8 mg/l which is not able to decrease tooth decay. According to the latest information,⁴ we have 104,533 dentists in Japan which is greater than the number of convenience stores. The lay public in Japan does not understand the importance of using fluoride in drinking water. Although the WHO, CDC, and developed countries recognise the relationship between the use of fluoride and tooth decay, unfortunately the Japanese government has been neglecting it. I believe the Japanese government needs to care for their own people by using fluoride and should change their dental fluoride policy as soon as possible.

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Paediatric dentistry

Artefact or fiction?

Sir, an eight-year-old girl was recently seen on the paediatric dental department at Newcastle Dental Hospital following referral from her GDP. Clinical and radiographic examination revealed caries in her primary molars. These were planned for restoration using preformed metal crowns (PFMC) by means of the Hall technique. However, upon discussion with her parents regarding this treatment modality it emerged that the patient was currently receiving growth hormone, and as part of her treatment was having her pituitary gland monitored annually, by means of an MRI scan. Her parents were thus concerned about the potential interaction between PFMCs and MRI, as they believed this may have some bearing on the image quality, or that they may interact with the scanner itself.

PFMCs are an austenitic stainless steel alloy (18/8 or Type 304) which is generally accepted as being non-magnetic (although significant cold working can cause conversion to the magnetic ferritic form).

A search of the literature did not reveal any studies specifically relating to PFMCs and MRI. The effects on stainless steel orthodontic components have, however, been extensively studied. Stainless steel orthodontic bands could be considered similar to PFMCs and these are thought to be MRI-safe, as long as they are securely attached.^{1,2} However, metals of this nature can produce large amounts of artefact, thus having a negative effect on image quality.

In fact, stainless steel crowns, nickel chromium crowns and cobalt chromium crowns are at highest risk of causing artefacts on an MRI scan.³ It was also noted that the maximum area of signal loss is when the offending material is within 10 cm of the region of interest.³ In relation to this case, it is not unreasonable to assume that PFMCs would cause unwanted artefacts, owing to the fact that

both the mandible and maxilla lie within a 10 cm radius of the brain. One could also imagine that if multiple PFMCs were present in multiple quadrants, this could even render an MRI undiagnostic. Delman⁴ has thoroughly investigated imaging in paediatric pituitary abnormalities, and has documented the unwanted artefacts caused by fixed orthodontic appliances, clearly showing the negative impact these can have on MRI imaging in the head and neck area.

Given the difficulties of liaising with this patient's overseas doctors, the primary teeth were restored conventionally with composite restorations instead. As PFMC use becomes more widespread in the paediatric population, queries over their interaction with MRI may increase and further research/guidelines in this area would be useful.

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Oral surgery

OS expansion

Sir, the British Association of Oral Surgeons (BAOS) welcomes the recent paper by Fullarton *et al.*,¹ which clearly illustrates the need to expand the number of oral surgery (OS) training posts, thereby increasing the number of OS specialists and ultimately consultants. These consultants can then not only deliver secondary care OS but would ideally be integral in the supervision and delivery of OS in the primary care setting as well as undergraduate