

Fig. 1 Radiograph showing penetrating foreign body embedded in the left cheek



Fig. 2 The metal foreign body below the left zygomatic arch

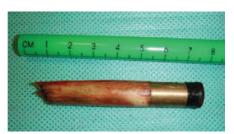


Fig. 3 The 8 cm section of the tip of a snooker cue complete with the rubber tip



Fig. 4 Meticulous irrigation and debridement was performed and the wounds were closed primarily

superiolaterally up along the external oblique ridge of the mandible, and embedded beneath the arch of the zygoma. Meticulous irrigation and debridement was performed and the wounds were closed primarily (Fig. 4).

Penetrating facial foreign bodies are relatively uncommon.<sup>1</sup> However, their identification and removal from wounds is often necessary. In adults, most cases of soft tissue foreign bodies after trauma or accidents are asymptomatic.

Symptoms, if present, could be pain or discomfort, local swelling and facial cellulitis.<sup>2</sup> The discovery of an occult penetrating facial foreign body on routine dental radiograph has been previously described.<sup>3</sup> However, their presence may not be considered if they do not show up on radiographs.<sup>4</sup>

The localisation of facial foreign bodies is important so that adjacent structure injury can be avoided and the time of removal can be reduced. Various imaging modalities, including plain radiography, xerography, computed tomography, and ultrasonography, have been advocated for detecting facial foreign bodies.<sup>5</sup> If plain radiographs, history and clinical examination fail to reveal the presence of superficial FBs, ultrasound or computed tomography can be used as an alternative method.<sup>6</sup>

Prompt diagnosis and appropriate treatment of penetrating facial injuries may lead to only minor sequelae. However, these patients may be in need of prompt resuscitation, due to bleeding both externally as well as intracranially. If an intracranial foreign body is suspected, urgent neuroimaging is mandatory to determine exact location and depth of the pen.<sup>7</sup>

This was an unusual case; firstly, there was absolutely no recollection of a snooker cue being used during the alleged assault and secondly, there was no exit wound suggesting a penetrating injury. Despite a history of assault, foreign bodies may not be suspected clinically leading to a delay in diagnosis. Clinical surgery is reliant on thorough history taking and careful examination. However, surprises can still occur and a surgeon has to be prepared for the unexpected. We recommend that hospital at night contact the maxillofacial team on call when suspected penetrating facial injuries present to the emergency department.

> S. Colbert, M. Algholmy, M. Gray, P. Ramchandani Poole

- Ryu C H, Janf Y L, Kim J S, Song H M. Removal of a metallic foreign body embedded in the external nose via open rhinoplasty approach. *Int J Oral Maxillofac Surg* 2008; 37: 1148-1152.
- Tay A B. Long-standing intranasal foreign body: an incidental finding on dental rediograph: a case report and literature review. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2000; 90: 546-549.

- Kirtle P E, Aaron G R, Jones H L, Duncan N O. Incidental finding of an intra-nasal foreign body discovered on routine dental examination: case report. Pediatr Dent 1991; 13: 49-51.
- Robinson P D, Rajayogeswaran R, Orr R. Unlikely foreign bodies in unusual facial sites. Br J Oral Maxillofac Surg 1997; 35: 36-39.
- Ginsburg M J, Ellis G L, Flom L L. Detection of soft-tissue foreign bodies by plain radiography, xerography, computed tomography, and ultrasonography. Ann Emerg Med 1990; 19: 701-703.
- Oikarinen K S, Nieminen T M, Mäkäräinen H, Pyhtinen J. Visibility of foreign bodies in soft tissue in plain radiographs, computed tomography, magnetic resonance imaging, and ultrasound. An in vitro study. Int J Oral Maxillofac Surg 1993; 22: 119-124.
- Sharif S, Roberts G, Phillips J. Transnasal penetrating brain injury with a ball-pen. Br J Neurosurg 2000; 14: 159-160.

DOI: 10.1038/sj.bdj.2011.390

## **SOUND VIA TEETH**

Sir, I have a keen interest in advances in technology and find it a fascinating topic to keep informed of. As of late, I have learned of an exciting development which has recently been granted a European CE Mark and may possibly be a technology that could change the future of how personal audio is transmitted to our ears via our teeth.

A company in the USA has developed a hearing aid which picks up sound from a microphone located behind the ear and wirelessly transmits these data to a removable intra-oral prosthesis. The intra-oral prosthesis is attached to the patient's maxillary molar teeth and converts these data into vibrational energy via micro actuators which in turn is picked up by the cochleae bypassing the middle ear all by conduction of bone. It is intended for patients with 'single sided deafness, conductive hearing loss or mixed hearing loss' and is the first nonsurgical and removable hearing prosthesis which transmits sound via teeth. The company claims it delivers high-fidelity sound and eliminates the need for surgically placed cochlear implants.

I can appreciate there will be refinements made to this device, and could be developed into exciting technologies of the future such as wireless intra-oral personal headphones, hands-free headsets for mobile phone users and even military communications. However, I can also envisage dental difficulties, for example, how this attaches in an edentulous patient, plaque retentive factors and risk of inhalation. Also if this device requires a repair would this become a service a dentist should provide and

will this require some form of training? This is certainly an interesting and unexplored field that has scope for many daily uses and may even strengthen our future relation with ENT specialists whom we would potentially work closely with to construct such devices.

R. S. Virdi Glasgow

- Sonitus Medical, 2011. Hearing Device Innovation

   About SoundBite. [online] Available at: http://www.sonitusmedical.com/product/ (accessed 18 March 2011)
- Endgadget, 2011. SoundBite dental hearing aid receives European approval - Engadget. [online] (updated 15 March 2011). Available at http://www.engadget.com/2011/03/15/soundbite-dental-hearing-aid-receives-european-approval/ (accessed 18 March 2011)

DOI: 10.1038/sj.bdj.2011.391

## **CLEFT PATHWAYS**

Sir, the study by Locke and Bishop<sup>1</sup> has thrown up some important issues that I would like to highlight. Having worked in a variety of restorative units over the last seven years I am sensitive to the difficulties in the provision of multidisciplinary treatment for cleft lip and palate patients whilst in their adolescent years but what is more worrying is the need for ongoing care past the age of 18.

The care pathways outlined for cleft lip and palate seem to decline once both orthodontic and surgical treatment has been completed at the end of growth and Clinical Standards Advisory Group (CSAG) audit requirements have been met. However, for many patients this period is not the end of their care but rather the start of a lifelong commitment and support from restorative specialist teams. Sadly this need may not be as accessible as current need requires.

Once formal cleft treatment is completed patients can be forgiven for being relieved due to the number of hospital visits and surgical episodes required for correction of their abnormality. Once into adulthood the ongoing maintenance and management of these patients who may present with complex problems that are otherwise unmanageable in primary care can fall on the specialist in restorative dentistry. Teeth in cleft patients have been shown to have a plethora of morphological anomalies<sup>2</sup> in addition to compromised periodontal health due to proximity to the cleft.<sup>3</sup> Where surgical

correction of the cleft has been suboptimal the requirement for obturator provision as opposed to further surgery may be preferred. A newer issue is the ongoing maintenance of implant prostheses. These issues have not been addressed formally for patients leaving the cleft pathway. In contrast the requirement of a specialist in restorative dentistry for the initial assessment, treatment and ongoing monitoring of patients with head and neck cancer has been documented in national clinical guidelines.<sup>4</sup> The figures for this patient cohort are slightly better than the results from the current Locke and Bishop study - although there is still an obvious requirement for improvement.

There is a need for the specialty of restorative dentistry in the lifelong treatment of these patients which needs to be highlighted for health care commissioners and CSAG.

A. Alani

- Locke M, Bishop K. An assessment of the contribution of UK specialists in restorative dentistry to cleft lip and palate services. *Br Dent J* advance online publication, 4 March 2011 (DOI 10.1038/ sj.bdj.2011.142).
- Al Jamal G A, Hazza'a A M, Rawashdeh M A. Prevalence of dental anomalies in a population of cleft lip and palate patients. *Cleft Palate Craniofac* J 2010; 47: 413-420.
- Huynh-Ba G, Brägger U, Zwahlen M, Lang N P, Salvi G E. Periodontal disease progression in subjects with orofacial clefts over a 25-year follow-up period. J Clin Periodontol 2009; 36: 836-842.
- Álani A, Owens J, Dewan K, Summerwill A. A national survey of oral and maxillofacial surgeons' attitudes towards the treatment and dental rehabilitation of oral cancer patients. Br Dent J 2009; 207: E21.

DOI: 10.1038/sj.bdj.2011.392

## **ANIMAL ETHICS**

Sir, I was very inspired at the fact that the winner of the prestigious BDA/Dentsply Student Clinical Programme was Deema Marzouq for her poster on ethical issues within periodontics. Periodontal regeneration is an area of intense research, however, often we do not consider that some products take proteins (eg amelogenin) from developing animals' tooth germ. Animal ethics should be considered an important factor when deciding which regenerative procedure to use. We must know just how many animals were used for the sake of one periodontal pocket.

H. Shah Student, King's College London DOI: 10.1038/sj.bdj.2011.393