

centre. When children attend they are accompanied by a parent/carer and also a social worker. In this way we are able to ensure multi-disciplinary working. The dental appendix to the medical report can also highlight the oral needs of the children to their health visitor (for the under fives) and many of the health visitors will have a dental health support worker as part of their team who can support families to access the care. Importantly this has also raised the profile of oral health with both our medical colleagues and colleagues in social services who are now more aware of the important input dentistry can have to the overall assessment of children's welfare, especially in this most vulnerable group.

C. Harris, A. Cairns, R. Welbury
Glasgow
DOI: 10.1038/sj.bdj.2013.60

TWO SMALL PUNCTURE WOUNDS

Sir, we would like to bring to the attention of the reader two unusual cases which we have recently seen.

Both patients were referred to us following routine scaling of lower teeth using an ultrasonic scaler and high volume suction, in dental practices. Both described similar accounts of a sudden pain in the floor of the mouth followed by the sensation that tissue was sucked into the aspirator tip for a number of seconds. Immediate swelling of the floor of the mouth and neck was experienced by both of these patients. Treatment was ceased immediately and the patients were referred on an urgent basis. Crepitus, as the characteristic finding of subcutaneous air, was evident in the anterior triangles of the patients' necks bilaterally. Further examination showed that two small puncture wounds were noted in the floor of the mouth of each patient. These patients were fortunate not to require any surgical airway intervention but were treated with prophylactic antibiotics and admitted to hospital for a period of observation. The surgical emphysema resolved spontaneously over some days.

We hypothesise that the puncture wounds made inadvertently by the ultrasonic scaling tip acted as a flap-type valve. Air was drawn into the floor

of the mouth when tissue was sucked in to the aspirator tip with subsequent spread of air into the neck along normal anatomical tissue planes.

Surgical emphysema can be a complication of a number of dental and maxillofacial procedures. The exhaust of an air rotor drill can sometimes inject a small volume of air into submucosal or subcutaneous tissues. Defects of the anterior wall of the maxillary sinus can predispose to surgical emphysema if patients blow their nose against resistance. This increases the intra-antral pressure and air can escape into the soft tissues. These include patients who have recently had maxillary osteotomies, patients with zygomatic fractures, and also individuals who have oro-antral fistulae closed surgically.

We feel that practitioners should be aware of this unusual complication that can arise during a routine and very commonly performed procedure.

C. J. Sweet, G. C. S. Cousin
Blackburn
DOI: 10.1038/sj.bdj.2013.61

NEW TWIST TO AN OLD STORY

Sir, I read with some amusement and interest the article by Jeavons on 'familiar forceps'.¹ Doubtlessly, down through time, both dentists and patients alike have sought and prayed for that 'painless and easy' extraction. In order to make in particular those molar and premolar extractions easy (easier), I have found empirically that rotation movements greatly assist. Standard forceps are placed on a multirooted tooth, after application of straight elevator to the buccal and lingual – be it a molar or premolar – care being taken to grasp as far apically with the forceps as possible. Then, firm steady clockwise rotational force is applied until strong resistance is felt. Pause against the resistance and relax the grip. Then redo this manipulation two to three times in the same clockwise fashion. Release the forceps and re-apply and perform this manipulation several times anticlockwise. Again release and proceed clockwise in such a fashion. By this stage the tooth will be found to be relatively loose in its socket. Standard elevation can now be attempted to deliver the offending

structure! This procedure fractures periodontal ligament fibres and aids socket dilation of the most reluctant of teeth. I personally find it much less of an effort than standard figure of eight and socket dilation via compression and tensional forces. The patient too doubtlessly appreciates the simpler approach with the only caveat being that for lower teeth good jaw support with the opposing hand is required – but this is not entirely different from a standard protocol extraction.

Quinn² has demonstrated that rotational movements are indeed workable for a multirooted tooth contrary to the general dogma of not using rotational forces in teeth with more than one root. Rotation can be demonstrated to be effective with a low incidence of alveolar and root fractures. Quinn uses the rotational approach with cow horn forceps into the bifurcation area. One caveat is that the roots must be relatively straight. Although this author does not advise this approach with finer multirooted maxillary teeth I personally find that the rotational method works well with upper as well as lower multirooted teeth.

From a theoretical viewpoint, the periodontal ligament can be modelled as an anisotropic, viscoelastic material.³ In other words, shows directional dependence in terms of stress and strain and has elements of elastic recovery and flow deformation. I would add that the periodontal ligament fibres can be perhaps also likened to a series of springs and thus could be mimicked by Hooke's spring laws. For those seeking the more technical engineering application, finite element analysis has been adequately outlined in regards translational orthodontic tooth movements.⁴ Ultimately, engineering modelling for dental extraction also has the potential to greatly support the clinician involved in this procedure daily.

Whatever the model or theory applied, perhaps the periodontal ligament and socket can be simply viewed as weaker under rotational shear and torsional forces than compression or tension. From first principles it can be appreciated that chewing forces would place less torsional load on teeth compared to compression or tension. Nonetheless, for my clinical colleagues I would without hesitation