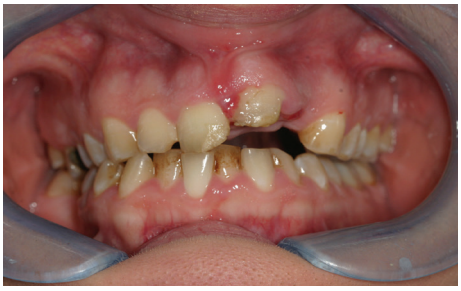
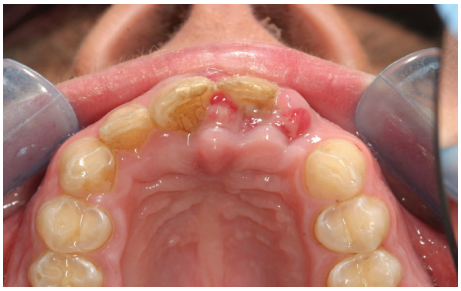
Case study: dental-alveolar trauma

This case study looks at the management of dental-alveolar trauma in a 30-year-old woman, using simple surgical, endodontic and restorative techniques. Psychologically, traumatic events such as this affect not only the patient but also their loved ones. This case demonstrates how biologically sound principles facilitate the immediate- and medium-term management of the teeth for the best possible outcome.





Figures 1 & 2. Trauma localised to the upper labial segment.

Clinical evaluation

The patient attended via A&E having knocked her teeth on the floor during an epileptic seizure. She was tearful and in pain, but she had no significant extra-oral injuries. Intra-orally the trauma was localised anteriorly in particular in the upper labial segment (Figures 1 & 2).

Tooth 12 had a mesio-incisal uncomplicated crown fracture and adjacent mucosa was non-tender and normal in appearance. Mild bleeding was evident at the gingival margin, but the tooth was not tender to percussion (TTP). Mobility and periodontal probing were within normal limits as was the response to sensibility testing.

Tooth 11 also had a mesio-incisal uncomplicated crown fracture. The tooth was slightly intruded into the socket and oriented mesio-labially; adjacent mucosa was tender but had a normal appearance. The tooth was firm but it gave an ankylosed sound on percussion and was TTP.

Tooth 21 had a complicated incisal fracture and was significantly intruded into the socket. The adjacent buccal mucosa was tender to palpation. The tooth was firm, gave an ankylosed sound on percussion and was TTP. No response to sensibility could be elicited.

Tooth 22 was missing; an empty socket was evident.

Clinical and radiographic examination of the upper canines was unremarkable, but did reveal satisfactory bone height and the absence of a periodontal ligament around teeth 11 and 21 indicative of intrusion.

The following diagnoses were made:

- intruded teeth 11 and 21 with a comminuted alveolar fracture
- subluxed tooth 12
- avulsed tooth 22.

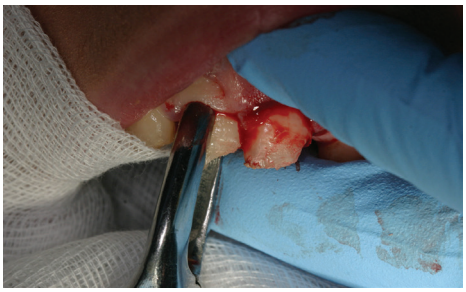
Treatment plan

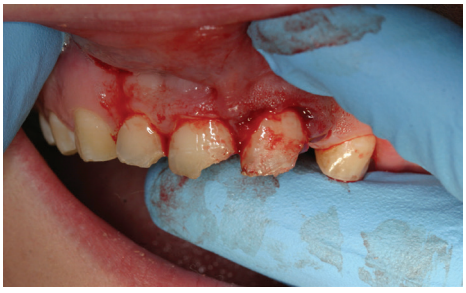
The patient was keen to retain her teeth if possible, and in light of her smoking and history of seizures the following plan was agreed:

1. Surgical repositioning of teeth 11 and 21.
2. Semi-rigid splinting of the upper anterior teeth.
3. Dental health education and whole mouth scaling.
4. Root canal treatment of teeth 11 and 21.
5. Resin-retained bridge from 23 to replace 22.
6. Long-term maintenance by the GDP.

Immediate management

Teeth 11 and 21 were surgically repositioned under local anaesthesia (Figures 3 & 4) and a semi-rigid splint was used from teeth 13 to 23 for four weeks (Figure 5). Once the splint was removed the teeth were re-assessed and both 11 and 12 deemed to be pulpless. Additionally, chronic apical suppurative periodontitis was diagnosed for tooth 11 (Figure 6).





Figures 3 & 4. Teeth 11 and 21 being surgically repositioned.

Case study: dental-alveolar trauma (continued)

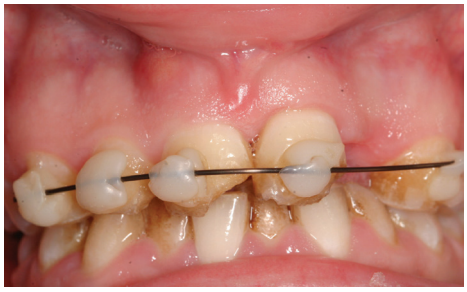


Figure 5. Splint in place at 4 week review.

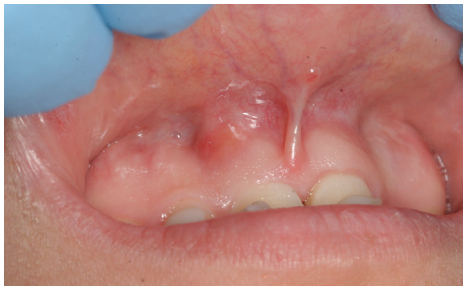


Figure 6. Splint removed at 4 weeks with signs of suppuration above 11.

Interim management

Root canal treatments were carried out on 11 and 21 over two visits with an interim dressing of calcium hydroxide. The suppuration above 11 resolved after the first appointment.

Maintenance management

The fractured teeth of the upper labial segment were restored using composite resin and a resin-retained bridge from 23 was made to replace 22 (Figure 7). The patient's posterior occlusion was re-established within eight weeks. At the six-month review, all teeth were asymptomatic with no clinical or radiographical signs of disease (Figure 8).

The prognosis for teeth 11 and 21 is guarded, but the patient is happy with the outcome and symptomless.

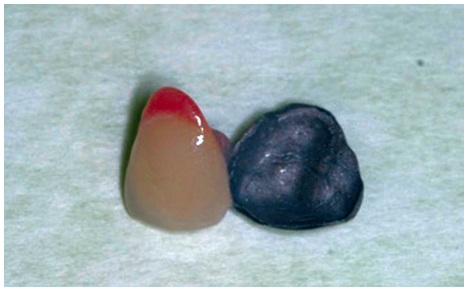


Figure 7. Bridge to replace 22.

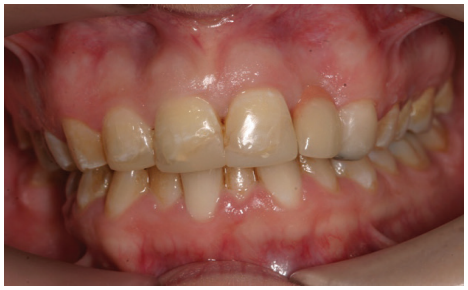


Figure 8. Patient at 6 month review

Shashi Mishra

Shashi served in the Royal Army Dental Corps for over 11 years. During this time he completed his endodontic postgraduate training at the Eastman Dental Institute in London. Shashi is now a Specialist in endodontics.

Whatever endodontic challenge your patient presents you with, Shashi has the expertise to help you.

Wherever you are in the treatment process, if you no longer feel confident dealing with the problem, Shashi is more than happy to assist until the patient is ready to return to you for restorative care.
Contact Shashi on **01252 713797** or email **info@elmsleighhouse.com**