

## Letters to the Editor

Dear Sir

### A Case Report: dislodgement of an orthodontic bracket into a sagittal split site

During orthognathic surgery there is always the potential for instrumentation to cause bracket dislodgement. However, to my knowledge, there have been no previously recorded cases of a fixed appliance component being retained at the actual surgical site. Retention of such a foreign body not only poses a potential health risk, but also has medico-legal implications (Machen, 1989) and this is the subject of the current case report.

This letter reports a 19-year-old Caucasian woman who had been undergoing upper and lower fixed orthodontic appliance therapy for 15 months in preparation for a bilateral sagittal split osteotomy to advance her mandible to correct her severe Skeletal II discrepancy. She had all four first premolars and her lower wisdom teeth extracted some 7 months earlier, and at the start of treatment was fitted with stainless steel brackets on the remainder of her permanent dentition, including her first and second molars.

Prior to surgery full thickness archwires were placed in both arches, and all the components were checked and found to be secure.

Surgery was carried out under naso-tracheal intubation and consisted of mobilizing the mandible into an interpositional wafer and then stabilizing it with 30-gauge stainless steel wire passing between surgical hooks on the archwire, and onto integral hooks on the first and second molar brackets. Following plating of her mandible, the temporary intermaxillary fixation was then released and the surgical site closed.

Two days later, however, prior to discharge, a postero-anterior radiograph revealed a dislodged orthodontic bracket lying in the superior aspect of the left sagittal split osteotomy site (Figure 1) and intra-oral examination confirmed absence of the lower left second molar bracket. The patient was informed, placed on a 5-day course of amoxycillin and a second general anaesthetic arranged for retrieval of the bracket, 28 days after the original surgery.

During this procedure, careful dissection of the soft tissues overlying the left osteotomy site revealed the position of the second molar bracket, which was subsequently retrieved.

The patient made an uneventful recovery and went on to continue her fixed appliance therapy for a further 9 months.

Although dislodgement of an orthodontic bracket into the surgical site is a rare complication to avoid such a similar case I would suggest:

- (1) placing bands rather than brackets on the terminal molars;
- (2) checking all the fixed appliance components during the procedure and especially before the surgical site is closed.



FIG. 1 Posteroanterior view of the jaws showing dislodgement of a second molar orthodontic bracket lying in the left osteotomy site.

Difficulties can arise, however, where ceramic brackets have been used as not only do they fracture more readily (Flores *et al.*, 1990), but their transparency and radiolucency make them more difficult to locate at operation, and also during recovery when the cough reflex is suppressed. It has therefore been suggested (Proffit and White, 1991) that, in such cases, either stainless steel brackets or ceramic brackets with integral metal slots are used.

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### References

- Flores D. A., Caruso J. M., Scott G. E. and Jeiroudi M. T. (1990)**  
The fracture strength of ceramic brackets: a comparative study, *Angle Orthodontist*, **60**, 269–276.
- Machen, D. E. (1989)**  
Legal aspects of orthodontic practice: risk management concepts, *American Journal of Orthodontics and Dentofacial Orthopedics*, **95**, 267–268.
- Proffit W. R. and White R. P. (1991)**  
In: *Surgical Orthodontic Treatment*, Mosby Year Book Inc., St Louis, pp. 204–205.