Technical note

Safe method of extraction to prevent a deeply-impacted maxillary third molar being displaced into the maxillary sinus

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Removal of impacted maxillary third molars is a common operation, usually for orthodontic indications. Displacement of the molar into the maxillary sinus or infratemporal fossa is a rare complication.1,2 However, there is the possibility of accidental displacement when the third molar is deeply impacted, particularly if its roots are not developed and it lies along the maxillary sinus, or if its roots are developed but it is close to or in the maxillary sinus. We report a safe method of extraction to prevent its displacement into the maxillary sinus.

After a gingival flap has been raised and the crown of the deeply-impacted maxillary third molar exposed, we drill the crown with a small diamond bur. A repositioning pin is inserted into the handle of a miniscrewdriver (KLS Martin, Tuttingen, Germany) (Fig. 1) that is used to reduce the condylar fragment,3 and inserted clockwise into the drilling hole (Fig. 2). Because the pin is fixed tightly by this tapping, the tooth can be removed safely using an elevator and the pin without the risk of displacement (Figs. 3 and 4).

Excessive force while using the elevator can cause displacement of the tooth. Experienced and less experienced surgeons alike may encounter such a complication when removing deeply-impacted maxillary third molars, and therefore a safe method of removal is necessary. Papadogeorgakis et al.4 reported extraction by rotating a round bur wedged in the crown after drilling 5–7 mm deep into the dentino-enamel junction. However, the bur may loosen with this method because the tooth is removed by twisting of the bur alone. In addition, the bur must be gripped by another instrument. As a safer method for removing deeply-impacted maxillary third molars, we extract them with the repositioning pin that

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is used to reduce the condylar fragment. The pin and third molar are tightly fixed because the pin has a thread.

This method can be used not only with the repositioning pin but also with the tapping pin in biodegradable plate systems or screw extraction sets (Synthes Inc., West Chester, PA)5 that are used to remove broken screws. We recommend its use when the lowest point of the impacted tooth (close to the maxillary sinus) is below the cervical line of the second molar.

References