Inhalation sedation compared with general anaesthesia for orthodontic extractions

Orthodontic extractions: a comparative study of inhalation sedation and general anaesthesia A. R. Shepherd, and F. J. Hill *Br Dent J* 2000; 188: 329-331

Objective

To compare directly inhalation sedation and general anaesthesia in terms of treatment success rate, various aspects of morbidity and time taken, when used for patients having orthodontic extractions.

Design

Patients requiring orthodontic extractions were treated with either inhalation sedation or general anaesthesia. The two groups were matched for age, sex, number of teeth extracted and pre-operative anxiety. Data were collected by questionnaires.

Setting

Unit of Paediatric Dentistry at the University Dental Hospital of Manchester.

Subjects

All patients referred for orthodontic extractions between November 1994 and May 1996 were invited to take part in the study. Total number of patients = 101.

Interventions

Sixty-six patients commenced treatment with inhalation sedation and 35 with general anaesthesia. Routine orthodontic extractions were carried out.

Outcome measures

Treatment success rate, various aspects of morbidity and total time taken were measured and compared for the two groups.

Results

Treatment success rates were high for both groups. Significantly less morbidity was found to be associated with inhalation sedation and the total time taken was significantly shorter with inhalation sedation than with general anaesthesia.

Conclusions

Inhalation sedation is a successful alternative to general anaesthesia for orthodontic extractions with patients experiencing less morbidity and the time taken being shorter.

In brief

- The use of inhalation sedation and local anaesthesia provides a very effective alternative to general anaesthesia for orthodontic extractions.
- With appropriate infiltration techniques multi-quadrant extractions can be completed in one visit and sedation is quicker and more convenient for patients than general anaesthesia.
- Inhalation sedation produces less morbidity and happier patients post-operatively.

Commentary

This paper adds evidence to the literature on the benefits of avoidance of general anaesthesia in dentistry. This investigation confirms the acceptability and effectiveness of inhalation sedation and local anaesthesia as a means of pain control for orthodontic extractions in children. In addition it provides data which support the clinical impression that early post-treatment recovery is less unpleasant following relative analgesia compared with general anaesthesia. The most obvious difference was fewer sore mouths following the former technique, presumably as a result of the use of local anaesthesia. There was no difference in late morbidity (at 24 hours) apparent from the outcomes studied.

The results indicate that treatment time is longer under inhalation sedation compared with general anaesthesia and this is one aspect which might cause concern to

those funding sedation services. Unfortunately the successful use of relative analgesia and the administration of local anaesthesia with minimum discomfort is time-consuming and there is no easy answer to this problem. However, despite the fact that surgery time is longer with inhalation sedation the overall cost of treatment has been shown to be cheaper when oral surgery is performed using this method compared with general anaesthesia.¹ Thus even economic factors support the use of sedation over general anaesthesia.

This study was confined to children who were prescribed extractions for orthodontic reasons. Therefore very young children and children in pain were not included. Other studies have shown that it is easier to avoid the use of general anaesthetics for orthodontic extractions compared with extractions caused by caries.² Thus the results should not be extrapolat-

ed to cover all children requiring extractions.

In tandem with the restrictions instigated by the GDC³ the results of this study should encourage practitioners to displace general anaesthesia as a recommended method of pain control for orthodontic extractions in children.

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- 1 Shaw AJ, Meechan JG, Kilpatrick NM, Welbury R R. Inhalation sedation and local anaesthesia instead of general anaesthesia for extractions and minor oral surgery in children: a prospective study. *Int J Paed Dent* 1996; 6: 7-11.
- 2 Tyrer G L. Referrals for dental general anaesthetics — how many really need GA? *Br Dent J* 1998; 187: 440-443.
- 3 General Dental Council. *Maintaining standards: guidance to dentists on professional and personal conduct*. November, 1998.