

IN BRIEF

- Thirty-eight percent of treated children reported post-operative pain and 25% used analgesic agent post-operatively.
- Contrary to high pressure intraligamental anaesthesia, intra-sulcular injection administered by a computerised delivery system did not increase the incidence or duration of post-operative pain.
- The highest incidence of post-operative pain was found after root canal treatment, preformed crowns and extractions.
- Performance of multiple restorations did not increase the incidence or duration of post-operative pain.
- Prediction and treatment of post-operative pain should be an integral part of professional paediatric care.


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Post-operative pain and analgesic use in children

Post-operative pain and use of analgesic agents in children following intrasulcular anaesthesia and various operative procedures **M. Ashkenazi,¹ S. Blumer² and I. Eli³**

ABSTRACT

Aim

To characterise post-operative pain (PDP) and use of analgesic agents in children.

Methods

The study consisted of 472 children, who received routine dental treatment. Teeth were anaesthetised by a computerised delivery system, either intrasulcular (CDS-IS) or by local infiltration (CDS-IF). Information regarding post-operative pain and use of analgesic agents was obtained by a telephone call within 24 hours after treatment.

Results

The overall incidence of PDP was 38%. 60.9% of the children who experienced PDP were given an analgesic agent. Incidence and severity of pain were significantly associated with type of dental procedure. The highest incidence was found after root canal treatment (62.5%) and preformed crowns (60.8%). A higher incidence of PDP was found in teeth with history of pain or abscess as compared to teeth with restoration or caries ($p < 0.01$). Incidence of pain was not associated with restoration material, extension, depth or type (occlusal vs proximal) of restoration, multiple restoration, gender, mode of CDS anaesthesia, or effectiveness of anaesthesia during dental treatment. Analgesic drugs were given mainly after preformed crowns, root canal filling and extractions.

Conclusions

PDP and analgesic use in children is common, especially after root canal filling, preformed crowns and extractions. CDS-IS is not associated with increased PDP.

EDITOR'S SUMMARY

The positive progress in oral health in developed countries in recent decades has ensured that the experience of dentistry for many children has improved immeasurably. No longer does caries dominate the field with the consequent need for treatment, be it restorative or extraction with the concomitant need for local anaesthesia. That is not the whole story. There is still, and doubtless will continue to be, a residual pool of disease that will require treatment and which is often marginalised in already disadvantaged groups in society. Anxiety and indeed phobia in adults about dental care can often be traced to unfortunate experiences they have had as children and so any measure which can reduce the likelihood of that happening is to be welcomed. This research is therefore important on two levels. Firstly it gives us an indication of the efficiency of the newly available computerised delivery system for local anaesthesia and how it can be delivered with a minimum of discomfort for the child patient. Secondly, it indicates those treatments which are more likely to cause post-operative pain; the placement of preformed crowns, root canal treatment and extraction. On the one hand this provides us with the knowledge of a further tool in our armamentarium to make active treatment requiring local anaesthesia more acceptable and on the other should prompt us to suggest appropriate post-operative analgesic drugs to parents and carers for use by their children. We are frequently encouraged to warn adult patients of possible post-operative pain and that, when we do, they regard this as good practice. Child patients are no less in need of such consideration and, quite apart from their short-term comfort the less painful and traumatic a dental experience can be the greater the likelihood that it will be for both their immediate and long term benefit.

The full paper can be accessed from the *BDJ* website (www.bdj.co.uk), under 'Research' in the table of contents for Volume 202 issue 5.

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Editor-in-Chief

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FULL PAPER DETAILS

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AUTHOR QUESTIONS AND ANSWERS**1. Why did you undertake this research?**

Pain during dental treatment is the major cause of avoiding dental treatment. Furthermore, I found during my work that post-operative pain can also influence the willingness of children to receive a consecutive treatment. Therefore, when I studied the effectiveness of intrasulcular anaesthesia delivered by the WAND, I wondered whether this technique has the same characteristics as intra-ligamental anaesthesia delivered by a high pressure syringe in relation to long post-operative pain. So we decided to study all the aspects of post pain in children.

2. What would you like to do next in this area to follow on from this work?

We have found that extractions and preformed crowns induce post-operative pain significantly more than other dental procedures. We therefore would like to study whether administration of pre-operative analgesia can decrease significantly this post-operative pain. Moreover, we would like to study the effect of pain during dental treatment or post-operatively on the willingness of children to receive a consecutive treatment.

M. Ashkenazi

COMMENT

Post-operative pain has been studied in adult patients, and significant differences were found in their pain experience after different operative procedures. Studies showed that the incidence and severity of post-operative pain showed no clear relationship to the duration of the surgical procedure.

Children feel pain and respond to pain medication in much the same way as adults. Practitioners must recognise all the factors that affect the feeling of pain. Pain can be variable and each patient brings a unique set of characteristics to be evaluated.

Recently, a new technique for anaesthetising primary teeth has been introduced. In this technique, the local anaesthetic solution is delivered to a similar area as the high pressure intraligamental injection (intrasulcular), but the solution is delivered by a low pressure computerised delivery system (Wand[®], Milestone Scientific, Inc. Deerfield, IL, USA) rather than by a pressure syringe. Using this kind of local anaesthesia, a 31.4% incidence of post-operative pain was reported.

The purpose of this study by Ashkenazi *et al.* was to evaluate the incidence of post-operative dental pain and the use of analgesic agents in children with regard to age, gender, type of behaviour modification, tooth history, mode of injection (intrasulcular vs infiltration), effectiveness of anaesthesia, type of restoration, type of material used, depth of restoration, extent of restoration, and number of teeth restored during a single appointment). The results are very interesting. They found that 65.7% of all children who reported post-operative pain received an analgesic, which is comparable to adults (68.3%).

The authors concluded that the general incidence of post-operative dental pain in children is approximately 38%, and is higher after root canal treatment, preformed crowns and extraction. But the most interesting finding was the fact that intrasulcular injection when delivered by a computerised delivery system, Wand[®], did not provoke more post-operative pain than buccal infiltration performed by the same system. The authors should be congratulated for this article that remarks the association between dental procedures, pain and the use of analgesic after dental treatment in children.

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