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REDUCING EARLY POSTOPERATIVE DISTRESS IN CHILDREN FOLLOWING DENTAL EXTRACTIONS UNDER GENERAL ANAESTHESIA: A LOCAL ANAESTHETIC STRATEGY

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Background

Use of local anaesthetic infiltration for dental extraction contributes to postoperative analgesia and haemostasis due to adrenaline induced vasoconstriction (1). In younger children facial numbness is an unpleasant side effect, contributing to significant distress on awakening. Other causes of postoperative distress in children following dental extractions include pain, emergence delirium and parental absence.

Problem

From March to May 2021, an audit of all children receiving dental extractions under general anaesthesia was performed at our children's hospital. Pre-/intraoperative paracetamol and NSAID were administered, unless contraindicated. Buccal local anaesthetic infiltration was performed prior to extraction of posterior deciduous or adult teeth. Out of 81 children, of mean (±SD) age 6.7 (±1.8) years, quality of recovery on awakening was rated as calm, upset but consolable or inconsolable in 56.8% (46/81), 19.8% (16/81) and 23.5% (19/81) respectively. Out of the 19 inconsolable children, facial numbness from local anaesthetic was the reason in 73.7% (14/19).

Strategy for change

In April 2022, dentists changed local anaesthetic technique from buccal infiltration to inter-papillary injections, either side of each posterior adult or deciduous tooth requiring extraction.

Measure of improvement

Re-audit of 74 children of mean age (±SD) 6.7 (±2.3) years was performed from April to July 2022. From 2021 to 2022, the overall percentage of inconsolable children on awakening fell from 23.5% (19/81) to 4.1% (3/74), the percentage of children, inconsolable from local anaesthetic numbness, fell from 17.3% (14/81) to 1.4% (1/74) and bleeding in recovery requiring dental intervention, fell from 9.9% (8/81) to 2.7% (2/74). The percentage of children with moderate or severe pain in recovery increased from 4.9% (4/81) in 2021 to 10.7% (8/74) in 2022, with 8.1% (6/74) receiving oral morphine in recovery in 2022.

Lessons learnt

Inter-papillary injection of local anaesthetic for dental extractions is better tolerated by children in the early postoperative period, resulting in less distress and less postoperative bleeding, when compared with buccal infiltration. This benefit outweighs the small percentage of children experiencing increased pain in recovery, which can easily be treated with oral opioid analgesia. Inter-papillary local anaesthetic injections provide insufficient analgesia alone and require supplementation by pre-/intraoperative paracetamol and NSAID, in all patients unless contraindicated.

Message for others

Hospitals undertaking dental extractions under general anaesthesia in children may consider use of inter-papillary injections of local anaesthetic for extraction of posterior adult or deciduous teeth. Improved tolerance will reduce incidence of inconsolable distress and bleeding in recovery.

Reference

1. PA McWillams, JS Rutherford. Assessment of early postoperative pain and haemorrhage in young children undergoing dental extractions under general anaesthesia, Int J Paediatr Dent, 2007; 17: 352-357