



The Effect of Novel Distraction Technique on Pain Management during Local Anesthesia Administration in Pediatric Patients

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KEYWORDS

Distraction, Anxiety, Children, Local Anesthesia

ABSTRACT:

Introduction: Distraction techniques serve to focus the child's attention away from the anxiety provoking procedure and include deep breathing and relaxing; engaging the child in conversation, audio analgesia and the likes

Objectives: To assess the effect of an active and novel distraction technique DCITAU (Drawing Circle In The Air Using leg) on the pain behaviour observed and reported by children receiving local anesthesia injections prior to dental treatment

Methods: The patients were explained about the study, an informed consent was taken in the language they understood. Thirty children in the age group 4 to 10 years who required local anesthesia administration for dental treatment pulp therapy, extractions were included in this study. During the administration of Local anesthesia, the children in the control group were made to relax. The children in the control group were made to relax by means of deep breathing Children in intervention group were taught to use the novel distraction technique (Drawing circle in the air using leg).

Results: There was a statistically significant difference between the study group and control group ($p = 0.001$).

Conclusions: The novel distraction technique appears to be a simple and effective method of distraction and can be routinely used during administration of local anesthesia in pediatric patients

1.Introduction

Pain is defined as an unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage. In Pediatric dentistry, pain sensation is generated by stimuli like sound of the drill or touch of the needle at the time of local anesthetic administration and is not necessarily

dependent on tissue damage. Primary reason for children seeking a dental care is pain. Needle phobia is the most common dental fear among children. Local anesthesia injection to a child with high levels of anxiety has been found as the most stressful procedure without considering the age, gender, or years of professional experience for general dentists and pedodontists. Distraction techniques serve to focus the child's attention



away from the anxiety provoking procedure and include deep breathing and relaxing; engaging the child in conversation, audio analgesia and the likes. The aim of this study was to assess the effect of an active and novel distraction technique DCITAU (Drawing Circle In The Air Using leg) on the pain behaviour observed and reported by children receiving local anesthesia injections prior to dental treatment.

2.Objectives

To assess the effect of an active and novel distraction technique DCITAU (Drawing Circle In The Air Using leg) on the pain behaviour observed and reported by children receiving local anesthesia injections prior to dental treatment

3.Methods

Parents of the patients were explained about the study, an informed consent was taken in the language they understood. Thirty children in the age group 4 to 10 years who required local anesthesia administration for dental treatment pulp therapy, extractions were included in this study. During the administration of Local anesthesia, the children in the control group were made to relax. The children in the control group were made to relax by means of deep breathing Children in intervention group were taught to use the novel distraction technique (Drawing circle in the air using leg). The behaviour of the children aged 4 – 5 years was noted using the Modified Toddler- Preschooler Post operative Pain Scale (TPPPS). That of children aged above 6 years were measured using the Wong Baker FACES Pain Scale.

4.Results

There was a statistically significant difference between the study group and control group ($p = 0.001$). Man U whitney sum rank test was used for analysis. Table 1 and 2 shows the comparison between the mean of pain intensity with distraction technique and deep breathing according to pain perception Scale.

Comparison of pain perception score in two groups is described in fig.1.

Table 1: WBS scale

Group (WBS)	N	MEAN	STD Deviation	P value
Study group	11	2	1.55	0.001
Control group	12	5.83	2.62	0.001

Table 2: TPPS scale

Group (TPPS)	N	MEAN	STD Deviation	P value
Study group	4	8	0	0.02
Control group	3	1.53	0.58	0.02

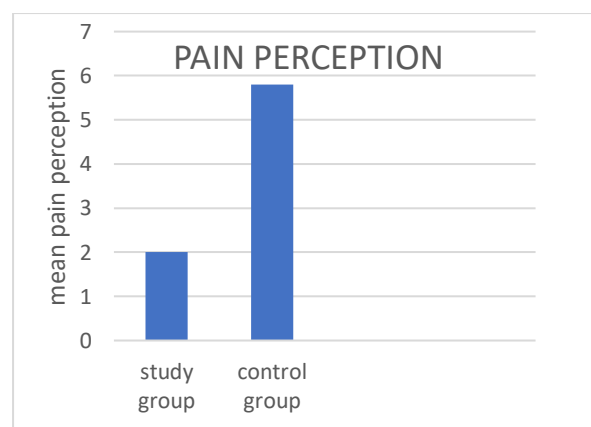


Fig.1 Comparison of pain perception score in two groups

5.Discussion

Management of pain during dental treatment is the most critical subject, the pain due to injection of local anesthetic can be decreased by a number of methods which include various distraction techniques. The present study was conducted to evaluate the effect of novel distraction technique on the pain management during local anesthesia administration in pediatric patients. Children in the age group of 4 - 10 years were selected for the study as this is the age group that is associated with the most disruptive behavior.

Children aged 4 – 5 years are considered quite young to effectively use scales that rely on self report of pain or discomfort. Observational scales like the Modified TPPPS have been found best for this age group (valid,



reliable, specific, sensitive and clinically applicable) and was therefore used in the study. Various distraction techniques have been used previously with the first being in 1999 by Peretz B, Gluck GM who used deep breathing during administration of local anesthesia.

The deep breathing served to relax the children and their study showed a positive effect of using this technique in children. The results of this study in accordance with study by Kamath PS et.al showed that the novel distraction technique was significantly better than deep breathing when used as a distraction technique during administration of Local anesthesia in children aged 4- 10 years.

There are very few studies that used novel distraction technique. This DCITUAL (Drawing circle in the air using leg) is self designed distraction technique used to distract the child's attention during administration of local anesthesia . This novel distraction technique on the other hand is easy for children above 4 years to comprehend and perform, simple to explain, and primarily requires no additional equipment. This makes it versatile for use both in clinical and field settings.

6. Conclusion

The novel distraction technique appears to be a simple and effective method of distraction and can be routinely used during administration of local anesthesia in pediatric patients. Future study can be carried out using the DCITUAL technique combined with relaxing by way of deep breathing which might be significantly better than deep breathing alone when used as a distraction technique during administration of nerve blocks in children aged 4- 10 years.

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