

**Original article**

## **A Clinical Comparative Study of Camouflaged Insulin Syringe With Conventional Syringe For Dental Extractions In Children.**

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### ABSTRACT

Pain is a complex phenomenon; physical maturation, cognitive development and emotion all influence the ways in which pain is experienced and expressed. An important part of performing dental treatment without patient suffering pain is the administration of local anesthesia. Paradoxically, administration of local anaesthetic drugs itself produces pain and anxiety that may cause subsequent unfavorable behaviour in children. Topical anesthetics may achieve beneficial effects prior to needle penetration and shown to reduce the discomfort of infiltration anesthesia. This study evaluates the acceptability of three topical anesthetic agents commercially available in India, and also determines whether assessments of pain severity by children correlate with similar assessments made by independent observer.

### **Introduction**

One of the most distressing aspects of dentistry for pediatric patients is the fear and anxiety caused by the dental environment particularly the dental injection. The application and induction of local anesthesia has always been a difficult task, and this demands an alternative method that is convenient and effective. A painless administration of local anesthesia facilitates good behavior and co-operation from the child.

The use of insulin syringes for administration of local anesthesia is new in pediatric dentistry. Therefore the aim of the present study is to compare the use of insulin syringe with that of a conventional luer lock syringe in pediatric dental procedures. Pain, comfort and effectiveness was evaluated using various scales. Here we have designed a camouflaged dental syringe to overcome dental anxiety. The main aim of the study

was to compare a camouflaged insulin syringe with camouflaged conventional syringe for dental extractions in children.

### **Material and methods:**

Patients visiting the Outpatient department of Pedodontics and Preventive dentistry in A.C.P.M Dental College, Dhule, with the chief complaint of over-retained primary teeth requiring use of local anesthesia for treatment were selected. A total of 60 patients were selected and were divided into two groups of 30 patients each. Group "A" patients will be administered Local anesthesia by a conventional syringe and Group "B" by insulin syringes. The syringes were used to administer local infiltration anesthesia. The syringes used in this study are the disposable U-40 insulin syringe(Dispovan,Hindustan syringes and Medical devices ltd ,India) and a

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conventional 2ml disposable syringe with a 26 G X 1\2 inch needle(Unolok ,Hindustan syringes and medical devices ltd,India).Children between the age group of 10 -14 years were selected. Strict adherence to basic injection techniques were followed . The syringes were camouflaged before use.The required procedures were carried out after taking the written consent from parents.The local infiltration was given using respective camouflaged syringe and each patient was evaluated using the scales for pain, comfort and effectiveness.

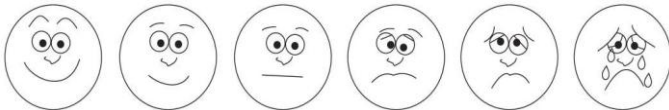
The pain scales used were:

**VISUAL ANALOGUE SCALE**

0 1 2 3 4 5 6 7 8 9 10

**NOPAIN** **WORST PAIN POSSIBLE**

**FACIAL PAIN SCALES**



0	2	4	6	8	10
Very happy, no hurt	Hurts just a little bit	Hurts a little more	Hurts even more	Hurts a whole lot	Hurts as much as you can imagine (don't have to be crying to feel this much pain)

**Results :**

**Comparison of conventional syringe and insulin syringe (Visual analogue scale)**

Parameters	Mean	Standard Deviation	p value
Conventional syringe	5.43	1.00630	0.001 HS
Insulin syringe	0.76	0.81720	

**Comparison of conventional syringe and insulin syringe (Facial pain scale)**

Parameters	Mean	Standard Deviation	p value
Conventional syringe	5.3333	1.32179	0.001 HS
Insulin syringe	1.0667	1.01483	

**Discussion:**

Advantages of using the U-40 insulin syringe for the first injection:

The U-40 insulin syringe is a 1ml syringe attached with a 30 gauge, 8mm ultra short needle. The insulin syringe due to the small diameter of its barrel and plunger allows the operator better control to deposit very small quantities of the local anesthetic solution.The ultra short 8mm needle gives more stability with less deflection during the initial mucosal penetration and subsequent injection. The fine diameter of the 30 gauge needle also aids a more comfortable initial penetration. Diana and associates reported that the mandibular alveolar nerve block is less unpleasant and children cry less when administered with a 30 gauge needle than when it is delivered with a 27 gauge needle.<sup>1</sup>The 1ml syringe is also visually less threatening to the child in case he/she sees the syringe.There is a concern about the aspirating ability of the 30 gauge needle. Malamed recommends the use of a 25 gauge needle for intra oral injections.<sup>2</sup> But, there is no conclusive evidence in literature against the use of a 30 gauge needle. Trapp and Davies reported that in vivo human blood may be aspirated through 23, 25, 27, and 30 gauge needles without a clinically significant difference in resistance to flow.<sup>3</sup>

**Figure 1: two types of syringes used in study****Conclusion :**

The study concludes that the insulin syringe can be used for local infiltration injection in children. The success rate of insulin syringe is more as compared to conventional syringe.

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