A Clinical Comparative study of Camouflaged Insulin syringe with Conventional syringe for Dental Extractions in Children

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INTRODUCTION
The most challenging part in Pediatric dentistry is the painless administration of local anesthesia. The sight of injection produces intense fear in the mind of the child which may lead to a negative behavior towards dental treatment[1]. In this study we have used Insulin syringe for administration of local anesthesia in children. Camouflaging of Insulin syringe was done to allay anxiety and fear of the patient, while administration of local anesthesia. Here, we have designed a simple toy like child friendly camouflage of a cartoon character. This camouflage was used in the study to mask the insulin syringe to make it more acceptable to patients and reduce dental anxiety.

MATERIAL AND METHODS
Patients visiting the Out-patient department of Pedodontics and Preventive dentistry in A.C.P.M Dental college, Dhule, with chief complaint of over-retained primary teeth requiring use of local anesthesia for treatment were selected. 60 patients included in the study were divided into two groups of 30 patients each. Group "A" patients will be administered local anesthesia by Conventional syringe and Group "B" by Camouflaged Insulin syringe using Local Infiltration anesthesia technique. Children from 10-14 age group requiring removal of over-retained primary teeth in either maxillary or mandibular arch were included in the study. The syringes used in the study are a Conventional 2ml disposable syringe with a 26 G X 1 1/2 inch needle( Unolok, Hindustan syringes and medical devices ltd,
India) and a disposable U-40 Insulin syringe (Dispovan, Hindustan syringes and Medical devices ltd, India). The extraction was carried out after taking the written consent from parents. Each patient was evaluated using the scales for pain, comfort and effectiveness. The pain scales used were:

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**VISUAL ANALOGUE SCALE**

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO PAIN</td>
<td>WORST PAIN POSSIBLE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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</tbody>
</table>

**FACIAL PAIN SCALE**

<table>
<thead>
<tr>
<th>0</th>
<th>2</th>
<th>4</th>
<th>6</th>
<th>8</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO HURT</td>
<td>HURTS LITTLE BIT</td>
<td>HURTS LITTLE MORE</td>
<td>HURTS EVEN MORE</td>
<td>HURTS WHOLE LOT</td>
<td>HURTS WORST</td>
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</tbody>
</table>

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**RESULTS**

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

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conventional syringe</td>
<td>5.43</td>
<td>1.00630</td>
<td>0.001</td>
</tr>
<tr>
<td>Insulin syringe</td>
<td>0.76</td>
<td>0.81720</td>
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</table>

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

<table>
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<tr>
<th>Parameters</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>p value</th>
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<tbody>
<tr>
<td>Conventional syringe</td>
<td>5.3333</td>
<td>1.32179</td>
<td>0.001</td>
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<tr>
<td>Insulin syringe</td>
<td>1.0667</td>
<td>1.01483</td>
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</tr>
</tbody>
</table>

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**DISCUSSION**

Insulin syringe was selected for the study due to smaller gauge of needle which permits the operator to apply lesser force during local anesthesia administration which showed lesser pain perception [2]. The Insulin syringe was camouflaged to allay dental anxiety and increase patient co-operation [3]. Infiltration technique was used in the study due to various reasons such as lesser penetration depth of needle needed, ease of administration for the operator, lesser amounts of local anesthesia could be administered in direct vision [4,5]. The short 8mm needle of Insulin syringe gives more stability and less needle deflection during the mucosal infiltration. The use of thinner gauge needle demonstrated a less painful experience among the patients [6]. Visual Analogue Scale and Facial Pain Scale was used in the study as it was easy to record findings for children over 6 years of age [7]. A study conducted to compare 27 and 30 gauge needles for inferior alveolar nerve block in children by Ghasemi and associates stated that 30 gauge needles were found better which was statistically significant [8]. A study conducted by Ashokan has also concluded a significant lesser pain perception with thinner gauge needles [9]. In this study camouflaged Insulin syringe due to their small size, colorful appearance and thinner gauge needle was found...
to have more patient acceptability which was statistically significant.

CONCLUSION
It can be concluded that the thinner gauge Insulin syringe was found to be better than a conventional syringe for local anesthesia administration in children.

Fig. 1: Two syringes used in the study

REFERENCES
7. Maria Shindova, Ani Belcheva. Pain assesment methods among pediatric patients in Medical and Dental research.