
**Pain reaction of children when receiving a periodontal ligament local anesthesia using a computerized device (Wand).
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The purpose of the study was to assess and compare the reaction of children who received local anesthesia for anesthetizing upper incisors with a conventional buccal infiltration (CBI); and an periodontal ligament injection (PDLi) with a computerized device (Wand), as well as the efficacy of the anesthesia and their reaction after treatment. 98 children aged 2 to 4 participated in the study. Children were sedated with hydroxyzine and nitrous oxide and were randomly assigned to receive either PDLi with the Wand or CBI. During the injection, the modified Behavioral Pain Scale was used. There were 21 girls and 23 boys between the ages of 2 to 4 in the study group (mean age 3.9 ± 1.3), and 16 girls and 29 boys (mean age 3.5 ± 1.0) in the control group. No significant difference was found between boys and girls. Regarding crying, face expression and eyes squeeze, more children reacted negatively while receiving the CBI injection, while children who received the anesthetic solution using the Wand reacted more positively. This difference was statistically significant. No significant difference regarding the efficacy of the anesthesia was observed. 80% of the children that received CBI scratched their nose or upper lip after the treatment while none of the children that received PDLi showed signs of discomfort. *Conclusion:* Children displayed better behavior when they received local anesthesia with the Wand than the CBI. Same efficacy of anesthesia was achieved with both techniques. Children did not show signs of discomfort (scratching of the upper lip/nose or crying) after treatment with the Wand whereas did when received CBI.