Short Communication

Usefulness of Noninjectable Anesthetic Gel for Intraperiodontal Gingival Retraction

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This study aimed to determine the efficacy of local anesthesia using Oraqix for gingival retraction in 35 healthy adult patients. The median visual analogue scale value was 20.5 ± 24.2 (range: 0 to 81) for pain encountered during the procedure. In most patients, a lower verbal rating scale value corresponded with a lower visual analogue scale value. More than 80% of the operators evaluated the procedure as simple to perform, and more than 65% considered it useful compared with conventional injectable anesthesia. The results suggest that Oraqix is an attractive alternative to injectable anesthesia generally performed for gingival retraction at dental clinics. *Int J Prosthodont 2008;21:129–130.*

Injectable anesthesia is commonly employed during treatment of the gingival sulcus. However, patients often experience pain from the needle insertion as well as the long and inconvenient duration of soft tissue anesthesia. Oraqix (Astra Zeneca), a noninjectable anesthetic gel developed for gingival sulcus procedures, contains lidocaine and prilocaine as active ingredients, along with purified water and a thermosetting agent, which causes the solution to change to a gel state at oral temperature. Oraqix has been reported to have excellent anesthetic effects.[1–3] This study investigated the efficacy of local anesthesia using Oraqix during gingival retraction procedures in healthy adult patients.

Materials and Methods

The study population comprised 35 healthy patients (55.5 ± 14.5 years old; range: 19 to 83) who did not experience pain from dental pulp stimulation and were able to understand a visual analogue scale (VAS) and a verbal rating scale (VRS). Subjects signed informed consent documents. Oraqix was placed in the gingival sulcus according to the manufacturer's instructions, a retraction cord was applied, and a final impression was taken.

Overall pain was assessed using a 100-mm horizontal ungraded VAS, with the left endpoint notated as "no pain" and the right as "worst pain imaginable," as well as with a 4-grade VRS (1 = no pain; 4 = severe pain). The operators also assessed the technical procedures and overall usefulness[1] as compared with conventional injectable anesthesia. The Ethical Committee of Kanagawa Dental College approved the design and protocol of this study.

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Table 1 Pain During Gingival Retraction Assessed Using VRS

Grade	No. of patients (%)
1	8 (22.9)
2	24 (68.6)
3	3 (8.5)
4	0

Table 2 Operator Assessments of the Technical Procedure (1 = very simple; 5 = very complicated) and Overall Usefulness (1 = useless; 5 = very useful) of Oraqix

Grade	Technical procedure No. of cases (%)	Overall usefulness No. of cases (%)
1	11 (31.4)	0
2	18 (51.4)	5 (14.3)
3	5 (14.3)	7 (20.0)
4	1 (2.9)	17 (48.6)
5	0	6 (17.1)

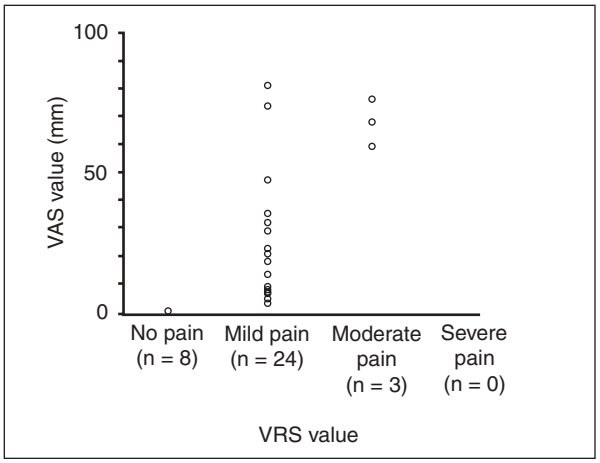

Fig 1 Scatter plot showing the relationship between VRS and VAS values.

Results

The median VAS value was 20.5 ± 24.2 (range: 0 to 81) for pain encountered during the procedure. The VRS values are shown in Table 1. Fig 1 shows the causal relationship between VAS and VRS values. The technical procedure was evaluated as "simple" or "very simple" by more than 80% of the operators, and more than 65% considered it "useful" or "very useful" compared with conventional injectable anesthesia. No adverse events were reported.

Discussion and Conclusions

The results confirm those of previous reports.[1–3] A number of subjects had lower VRS values, and a low VAS value was found to correspond with a low VRS value (Fig 1).[2,3] In addition, most of the operators evaluated the procedure as "simple" or "very simple," while 65% or more considered it "useful" or "very useful" (Table 2). The authors speculated that poorly performed technical procedures and/or sensitivity to the technique by the subjects caused inadequate anesthetic effects in some cases and the resulting conflicting evaluations. The present results are quite limited because of the lack of a control group. Nevertheless, the authors concluded that Oraqix is a reasonable alternative to conventional injectable local anesthesia during gingival retraction in a dental clinic setting. Further, it may also be useful for other dental treatments with unnecessary surgical incision of the gums, such as dental implant procedures.

References

1. Donaldson D, Gelskey SC, Landry RG, Matthews DC, Sandhu HS. A placebo-controlled multi-centred evaluation of an anaesthetic gel (Oraqix) for periodontal therapy. J Clin Periodontol 2003;30:171–175.
2. Jeffcoat MK, Geurs NC, Magnusson I, et al. Intrapocket anesthesia for scaling and root planing: Results of a double-blind multicenter trial using lidocaine prilocaine dental gel. J Periodontol 2001;72:895–900.
3. Magnusson I, Geurs NC, Harris PA, et al. Intrapocket anesthesia for scaling and root planing in pain-sensitive patients. J Periodontol 2003;74:597–602.