



Influence Of Different Types of Entrapment Threads on The Degree of Gingival Retraction

Chaqqonov Faxriddin Xusanovich
Samarkhand State Medical University

Abstract: Gingival retraction is an important procedure in the fabrication of indirect restorations, which is necessary to obtain a more accurate impression. Correct enlargement of the periodontal sulcus remains one of the most important procedures. In this regard, retraction threads and retraction techniques should be selected that minimize tissue trauma and eliminate irreversible loss of soft tissue height. Gingival retraction was first reported by Thompson in 1941. Currently, many materials for this procedure are available on the dental market, with retraction threads occupying a major position among them.

The purpose of this study is: to determine what type of retraction thread is best used and how long the retraction thread needs to be placed in the periodontal ligament groove in order to retract the gingiva sufficiently without causing gingival retraction.

Materials and methods: A sociological survey was conducted among dentists in the city of Samarkand to determine the gum retraction techniques used by the doctors and the presence of complications. For comparison, data from a sociological survey of dentists conducted by the journal Operative Dentistry on the same issue were used. In addition, animal studies were conducted to clarify the dependence of gingival retraction on the impregnation composition of the threads and the time they were present in the periodontal ligament sulcus. The filament used was the Gingipak filament, which is widely available on the dental materials market. A sociological survey of dentists in the city of Uzbekistan revealed that 96% of orthodontists use the retraction method. Gingipak threads are used by 83%, while the remaining 13% use other methods. Only 24% of orthodontists using Gingipak retraction threads are working according to the manufacturer's instructions, meaning they leave the threads in the periodontal ligament groove for an average of 15 to 20 minutes, while the remaining 76% leave the threads in place for a longer time. In terms of frequency of use, epinephrine-impregnated threads ranked first at 60%, aluminum chloride-impregnated threads second at 29%, and unimpregnated threads third at 11%. Approximately 47% of physicians noted the presence of slight gingival recession on average 10 to 14 days after revision. A survey conducted by Operative Dentistry also showed that most dentists prefer to use epinephrine-impregnated threads. In the experiment, Zingipac Retraction threads impregnated with epinephrine and aluminum chloride and non-impregnated threads were placed in the gingival sulcus for 20, 40, and 60 minutes. Animals were given soft food for 2 weeks, observed, and their gingival condition was checked after 14 days. When the threads were used without impregnation, gingival recession was observed to be within 1 micron after gingival retraction. In gingival retraction using epinephrine-impregnated sutures, gingival retraction was 4 microns when the sutures were retained in the groove for 40 minutes and 10 microns when they were retained for 1 hour. When the floss was retained in the dental groove for 20 minutes, gingival retraction did not exceed 2 μm . When the gingiva was retracted with a thread containing aluminum chloride, the gingival retraction was 2 μm when the thread was retained for 20 minutes, 12



µm when the thread was retained in the periodontal groove for 40 minutes, and 15 to 17 µm when the thread was left in place for 1 hour.

Conclusion: Thus, gingival retraction is greatly influenced not only by the composition of the thread but also by the time the thread spent in the periodontal ligament groove. The effectiveness of the use of threads widely used by dentists in regression and the degree of regression were clarified. Proper retraction technique and properly selected sutures can help clinicians achieve a successful retraction technique with a satisfactory aesthetic result, without harming the patient.

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