

Patient's Attitude to Rubber Dam Use

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Summary

The purpose of the study was to assess the patient's attitude towards the use of a rubber dam and to determine whether any clinical factors influence it. After receiving endodontic treatment under a rubber dam, patients were asked to complete an anonymous questionnaire. They were divided into 2 groups: Group 1 - operators were final-year dental students at the School of Dental Medicine University of Zagreb and Group 2 - operators were (dentists) dental specialists and resident dentists at the Department of Restorative Dentistry and Endodontics, School of Dental Medicine University of Zagreb. The data were statistically analysed by descriptive statistics and Pearson chi square and variance analysis. The majority of the patients (69.1%) in both groups would prefer rubber dam use at their next appointment and consider it pleasant and comfortable to wear (58.2%). Dentists did not explain the reason for the use of the rubber dam to 40.0% of the patients, but when they did, all but two patients understood the explanation. The time required for placing the rubber dam without the assistant's help was 3 minutes on average and the duration of the endodontic treatment under rubber dam was 69 minutes on average. When compared to the dental specialists students required more time to place the rubber dam and to perform endodontic treatment under it. From this study it can be concluded that patients do not have a negative attitude towards the use of a rubber dam, that the placement of a rubber dam does not take long and that operator's experience influences the patient's attitude.

Key words: *rubber dam, endodontic treatment, patient's attitude.*

Acta Stomat Croat
2004; 319-322

ORIGINAL SCIENTIFIC
PAPER
Received: March 4, 2004

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Introduction

The isolation of the tooth with a rubber dam during endodontic treatment was recommended in 1994 by the European Endodontic Association (1) and their guidelines in endodontic treatment were accept-

ed by the Croatian Endodontic Association (2). There are several reasons for the application of a rubber dam during endodontic treatment: prevention of incidental aspiration or swallowing of the instrument (3), isolation of tooth from saliva, prevention of the leakage of irrigating solutions into the mouth,

infection control and better visibility within the working field (4). In addition to endodontic treatment the use of a rubber dam is recommended during construction of direct composite restorations or in cementing prosthetic restorations by adhesive technique, for isolating the working field in the oral cavity from moisture. When a few amalgam restorations were removed with a rubber dam set in place, considerably lower increase of mercury in plasma was found when compared to the group where the teeth were not isolated in such a manner (6).

Although studies on the use of a rubber dam by dental practitioners have not been carried out in Croatia, research in other countries suggests quite rare use of a rubber dam (3,4 - 35,5%) regardless of the standard of the country in which the research was carried out in (7-9). Rare use of a rubber dam takes place despite the fact that it is recommended by professional associations and the fact that the technique of its placing is learned in the majority of European schools of dentistry (7, 8). However, most dentists are not familiar with the simplicity of its application, promptness of its placing and its importance in preventing incidents during treatment. The reasons stated by dentists for not using a rubber dam are: time required for its placement, high price of the equipment and of the required disposable material which cannot account for the expenses of the treatment, insufficient skill for its use and, most importantly, the assumption that it would be unpleasant to patients and that they would not accept it (11). The purpose of this study was:

1. To record patients' views of their experience of rubber dam use.
2. To evaluate the influence of the operator's experience on patients' attitude to rubber dam use.

Subjects and methods

A questionnaire with ten simple questions (Figure 1) was made according to the questionnaire form used by Stewardson and McHugh (12) in their research.

Questions were referred to:

- Age and sex.
- Prior experience with a rubber dam.
- Present experience with a rubber dam.
- Desires on future use of a rubber dam.

The questionnaire included a column for the time required for placing the rubber dam and the duration of the treatment which was filled in by doctors performing the treatment. The research was carried out among adult patients of the Department of Restorative Dentistry and Endodontics, School of Dental Medicine University of Zagreb, on whom endodontic treatment with obligatory use of a rubber dam was performed. The patients were asked to anonymously complete a questionnaire after the treatment. The questionnaire was completed in the waiting room in order to avoid operator's influence on the patient's answers.

One-hundred-and-ten questionnaires were collected. Students treated 60 patients and the other 50 were treated by dental specialists.

The data from the questionnaires were entered into a database and subsequently analysed using SPSS on a PC (Portage 2010 Series, Toshiba, Neuss, Germany). The data were analysed by descriptive statistics and Pearson chi square and variance analyses ($p < 0.05$) were used whenever necessary.

Results

The patients aged from 16 to 69 years, were 60 (54.5%) women and 50 (45.5%) men.

Previous use of rubber dam

Fifty-six (50.9%) patients did not have any previous experience with a rubber dam, while 54 (49.1%) patients had a rubber dam applied at previous dental appointments. Eighteen (33.3%) of the patients who had previously had a rubber dam applied had it placed by the same dentist, 10 (18.5%) by other dentists and 26 (48.2%) by a student in practice class. In comparison with previous rubber dam experiences, 16 (29.6%) patients considered the present experience better than the previous one, 36 (66.7%) had the same experience while 2 (3.7%) consider the present experience worse than the previous one.

Dentist's explanation

44 (40.0%) patients were not given any explanation by the dentist of the reasons for rubber dam use before its application. When the explanation was

given, which was the case in 66 (60%) of the patients, the purpose of rubber dam use was clear to almost all patients (only two respondents stated that they did not understand the explanation).

Benefits of rubber dam use

Eighty (72,7%) patients consider rubber dam use to be useful to both patient and dentist, 22 (20.0%) consider it to be more useful to the patient, while 8 (7.3%) feel it to be useful exclusively for the dentist. The percentage of respondents who feel that a rubber dam is useful to patients is somewhat greater in the group which had been explained about the reasons for its use, while a somewhat greater percentage of respondents considered its use to be useful to both patients and dentists or dentists only in the group which had not been given the explanation.

The relationship between these two variables is statistically significant ($p = 0.013$, $p < 0.05$).

Rubber dam comfort

Use of a rubber dam is pleasant and comfortable to most of the patients (64-58.2%), and uncomfortable to 42 (38.2%) patients. Only 4 (3.6%) patients described the experience with a rubber dam as painful.

Attitude towards rubber dam use in the future

Seventy-six (69.1%) patients would like a rubber dam to be used next time, 28 (25.4%) would not prefer its use while 6 (6.5%) of the patients would not want its use.

There is statistically significant difference ($p = 0.00076$, $p < 0.05$) between the percentage of the patients who want to be treated under a rubber dam again, dependent on whether the therapist was a student or a specialist (Figure 2).

Time required to set up the rubber dam without the help of an assistant and the duration of the treatment with the rubber dam in place

Time required to place the rubber dam without the help of an assistant was 3 minutes on average (from 30 s to 15 min), and the duration of endodontic treatment under the rubber dam was 68 minutes on aver-

age (from 20 to 150 minutes) (Table 1). Time required to place the rubber dam, as well as the duration of the endodontic treatment was considerably shorter in the group of patients where operators were specialists than where operators were students (Table 2).

Discussion

The questionnaire conducted at the Department of Restorative Dentistry and Endodontics included a series of questions which served in making conclusions on patients' accepting rubber dam application. Results clearly suggest that a small number of patients consider the use of a rubber dam to be extremely uncomfortable i.e. painful and a small number of them do not want its further use, which is in accordance (concordance) with Stewardson's and McHugh's studies (12). Although this study shows that there are such patients who do not accept a rubber dam, as determined earlier (13), most of them have a positive attitude towards such a procedure. A relatively high percentage of the patients who have not been given an explanation about the use of a rubber dam shows an oversight of the operator that can influence the patient's attitude. The fact that almost all the patients who had been given an explanation understood it, indicates the need for patient education which will contribute to better cooperation and acceptance of the operator's procedures.

When compared to the percentage of patients who consider previous experience with a rubber dam to be better than the present one, there is a considerably higher percentage of those who consider the present experience to be better. This suggests that frequent rubber dam application leads to patient adjustment. Better experience can also be influenced by the therapist's skill, especially that of students, who with repeated use become more skilled and place the rubber dam easier and faster.

Preference for future use of a rubber dam depends on the operator's skill because the patients whose operators were more experienced (specialists and resident doctors) rarely expressed the wish for a rubber dam not to be used in future appointments.

The average time required to place the rubber dam for specialists and students without assistance was 3.5 minutes and is a bit longer than in the pre-

vious study (12), but when only specialists and resident doctors are taken into consideration the time was much shorter, 2 minutes on average. The short time required to set up the rubber dam by an experienced dentist, refutes the statements of some dentists who gave the mentioned factor as the reason for not using it (11). Relatively slight loss of time that is made up during endodontic treatment itself due to easier work and avoidance of unnecessary changing of cotton-rolls, is one more reason in favour of rubber dam use.

Rubber dam use is related to the final outcome of endodontic treatment. Abott (14) believes that not using a rubber dam is one of the important factors which cause long-term pain after endodontic treatment. A group of researchers from Belgium found that, besides the initial size of the periapical lesion, procedure and apical level of root canal filling, rub-

ber dam application also significantly influences revision of endodontic treatment (15).

The results of this study, together with all of the mentioned advantages should help in overcoming the common view that patients have a negative attitude towards this useful procedure. The acceptance of this method of tooth isolation can be even more increased with more detailed explanation, a positive attitude by the dentist, better skill in placing the rubber dam and the correct choice of clasp.

Conclusion

1. Patients generally do not have a negative opinion on rubber dam use.
2. Patient's attitude towards such procedure is influenced by the operator's experience and attitude.