Restorative Case Presentation

Sharon Irwin
Patient Details

Male – aged 13

DOB – 28/07/00

Social History – lives with Mother and siblings, 2nd year high school

Medical History – fit and well

Medication – none

Dental History – regular attender

Home Care – brushing at night only

Caries risk – high
Initial Examination

Extra Oral Exam – NAD
Soft Tissue Exam – buccal swelling 36
PCO – pain lower left quadrant
OH – inadequate, plaque deposits throughout, supra gingival calculus present 33-43 lingually and upper molars buccally
BOP – throughout
85 exfoliating, 45 visible with gross plaque deposits present
Enamel hypomineralisation 16, 13, 22, 23, 26
Anxious patient

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Radiographic Report

Abcess 36
Caries 46
# 11
# 21
85 exfoliating
8’s developing
Photos taken 1 week after I completed restoration of 21 di. I had hoped to have another case to use but due to cancellations and fail to attend this was the only suitable case I could use and the reason the pictures were taken after I had started the treatment.
36 was extracted at initial visit
Toothbrushing instruction
Oral hygiene instruction
Diet advice
Scale and polish
Fissure seal 16 and 26
Restore 11 and 21
Appointment with referring clinician for inhalation sedation to restore 46 with LA
Orthodontic assessment and refer to GDP for ongoing care
Review 6/12 to confirm caries free
Treatment

Patient seen by BSc undergraduates for fissure sealants 16, 26 and oral hygiene advice.

First visit with myself I gave further oral hygiene and toothbrushing instruction, ultrasonic scale and polish full mouth and completed restoration of 21 di using Durafill microhybrid composite filling material, shade A2. A diet diary was issued and diet advice given.

At the second visit reviewed diet diary and offered further diet advice. Disclosing tablets given for home use to encourage improved plaque removal. Dry dam applied and 11 mid restored using Durafill A2 composite material.

Patient to return to referring clinician for inhalation sedation appointment.
Clinical photograph post treatment
PICO

- **P** – For patients requiring restorative treatment
- **I** – does the use of rubber dam for moisture control
- **C** – compared to cotton wool rolls and aspiration
- **O** – achieve improved longevity of the restoration, and provide improved safety and comfort for the patient?
The literature on rubber dam use is limited. The Cochrane Collaboration is currently undertaking a review of available literature and has published a protocol for gathering information and analysing results.

A lot of the studies were over 10 years old so could not be included in this literature review and the available evidence is inconclusive in terms of whether rubber dam isolation improves longevity of restorations placed with it versus cotton rolls.
The Cochrane Collaboration are currently conducting a review of available evidence regarding rubber dam isolation for restorative treatment in dental patients as there is currently conflicting evidence whether rubber dam use influences the treatment outcome of restorative treatments. The objective is to assess effectiveness and adverse effects of rubber dam isolation compared with other types of isolation for restorative treatment.

The protocol describes the criteria for selecting studies to be included in the review and how the data will be collated and analysed. A summary of the review will then follow.

In the description of the intervention it states the potential advantages of rubber dam are: improved visibility for the dentist; protection of the patient’s airway and soft tissues; reduction of cross infection by reducing microbial content of aerosol. However, there are real and adverse effects to be considered such as patient acceptance, time for application, cost, latex allergy and mucosa damage when placing clamps.

Once completed this will be the highest level of evidence.

The aim of the study was to compare the survival rates of restorations placed using rubber dam or cotton rolls for isolation.

232 children aged 6-7 years from 2 cities in Brazil, with 1 primary molar with a proximal lesion into dentine were randomly assigned into 2 groups. The control group had restorations placed using cotton rolls and the experimental group using rubber dam isolation. Four final year dental students, who were trained in the ART technique, completed the restorations. The restorations were assessed for 2 years at 6 monthly intervals. A total of 8 calibrated examiners assessed the restorations and were blinded to which group the child belonged.

Both groups had similar survival rates after 2 years and the study concluded that rubber dam does not increase the success of class II ART restorations significantly.

This was a randomised controlled study and grade 2 level of evidence.
This study was only available online as an abstract.

The aim was to evaluate two methods of tooth isolation on the survival rate of proximal ART restorations in primary molars.

It was undertaken in 2 rural areas of Kenya with 7 operators randomly assigned to a group of 8 assistants. 804 children had 1 proximal cavity restored with the ART technique and either rubber dam or cotton rolls were used for isolation. 3 different types of glass ionomer cements were used and the restorations assessed for 2 years after completion.

30.8% of the ART restorations had survived after 2 years. The survival rate of restorations placed under rubber dam was higher and GIC material or operator had no influence on the results.

It concludes that the survival rate of the restorations in the study was low but the use of rubber dam resulted in a higher survival rate.

Without reading the full text it is difficult to grade the evidence, however it does appear to be a randomised controlled study so therefore may be grade 2 or 3.
The aim of the study was to evaluate the stress parameters during a standardised dental treatment procedure done with or without rubber dam. The time taken for the treatment was also measured as a secondary outcome variable.

72 patients aged 6 – 16 years requiring fissure sealants were selected and divided into 2 groups by a dental assistant drawing sealed lots. In the test group the sealants were placed under rubber dam and the control group had sealants placed using cotton rolls and saliva ejector. In patients parameters of stress were measured (pulse rate, breath rate, skin resistance, blood pressure) at 5 measuring points. Pain perception during treatment was also measured. Only the pulse rate of the operator was measured.

The breath rate was significantly lower and skin resistance level significantly higher with rubber dam use. Subjective pain perception was significantly lower for this group and the time taken was 12.4% less.

The study concludes that isolation with rubber dam caused less stress in children and adolescents compared to cotton rolls if applied by an experienced dentist.

This study, although a randomised controlled study could not blind the single operator and the operator has a personal preference for rubber dam, therefore there may be bias in the results.

Level of evidence – grade 3.
Using rubber dam during treatment can result in a reduction of stress for the patient and save time because less time is wasted changing cotton rolls and soft tissues are easier to manage.

Patient safety is improved as it provides protection of the airway and soft tissues.

Makes it easier for the clinician to see so may result in an a better filling. Presently there is no concrete evidence that it makes your filling last longer however it is useful for the above reasons.