Basic Guide to Dental Procedures
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How to use this book

As the title suggests, the book has been written as an introductory guide to the more usual dental procedures carried out in a modern dental practice. It does not attempt to explain the full theoretical and clinical technique behind these procedures, rather it aims to give a sufficient overview of them, with the use of ‘before and after’ colour photographs to hopefully make the book useful for helping to explain certain dental procedures to patients. In this second edition, each chapter has been updated as necessary in line with the latest dental techniques and materials available to the profession.

However, the main readership is envisaged to be dental care professionals, especially those unqualified or inexperienced dental nurses who may not have access to viewing many of the procedures described, as many practices continue to specialise in providing dental care only in certain areas of dentistry. It should be used, then, in conjunction with the excellent textbooks already available for dental nurse training, where more detail of instruments used and other underpinning knowledge is provided. By popular request, photographic examples of the instruments and materials, which may be required for various procedures, have been included in this edition, and while the images used provide guidance for those undertaking OSCE-style training and assessment, they are not intended to be exhaustive in their content.

The text in each section is laid out to explain the reasons behind the treatment described, the relevant dental background, the basics of how each procedure is carried out and any aftercare information necessary. It is beyond the remit of the book to cover every current technique in every dental discipline discussed, so it is hoped that the text provides at least the basic information required for the reader to gain an understanding of the procedure, before seeking a greater depth of knowledge elsewhere.

The inclusion of information on extended duties for dental nurses in this edition is of particular relevance to the United Kingdom-based readership. Examples have been given throughout the chapter of the type and extent of ‘in-house’ training that may be provided in a broad selection of these duties, as well as examples of suggested recording sheets that may be used to provide evidence of monitoring and competency in various of the necessary skills discussed. It is hoped that the information provided will help UK dental practices to train and extend the useful skills of its workforce, in an effort to develop their dental team and widen their provision of dental services for the ultimate benefit of their patients.

Wherever possible the correct dental terminology has been adhered to, but as the dental knowledge of the expected readership will vary widely, a glossary of terms has been updated and included to clarify certain definitions in the context to which they have been referred to in the text.
Preventive techniques are aimed at preventing the onset of dental caries in teeth, to maintain the dental health of a patient.

The two procedures discussed are:

- Application of fissure sealants
- Application of topical fluorides – full mouth or specific teeth

Any surface area of a tooth that cannot be cleaned easily by the patient can allow food debris, and ultimately plaque, to accumulate there and allow caries to develop by acting as a stagnation area. Patients usually clean their teeth by tooth brushing, flossing, the use of other interdental cleaning aids, mouthwashing, or any combination of these techniques.

The usual sites that can act as stagnation areas are the occlusal pits and fissures of posterior teeth (Figure 1.1), and especially the first permanent molars which erupt at around 6 years of age.

These teeth are particularly prone to caries because:

- They are the least accessible teeth for cleaning, being at the back of the young patient’s mouth
- They erupt at an age when a good oral hygiene regime is unlikely to have been developed, so may be cleaned poorly by the patient
- Younger patients often have a diet containing more sugars than an adult, as the concept of dietary control will not be appreciated
DETAILS OF PROCEDURE – FISSURE SEALANTS

The occlusal pit or fissure needs to be eliminated to prevent it acting as a stagnation area, and this is achieved by closing the inaccessible depth with a sealant material.

The materials used are either unfilled resins, composites, or glass ionomer cements, or a combination of these two materials (known as a compomer).

The usual instruments and materials that may be laid out for a fissure sealant procedure are shown in Figure 1.2.

TECHNIQUE:

- The tooth is kept isolated from saliva contamination, as materials will not adhere to the tooth when it is wet
- Isolation techniques include the use of cotton wool rolls and low speed suction techniques using a saliva ejector (Figure 1.3)
Preventive techniques

- The occlusal fissures and pits are chemically roughened with acid etch to allow the microscopic bonding of the sealant material to the enamel.
- The etch is washed off and the tooth is dried; the etched surface will appear chalky white.
- Unfilled resin is run into the etched areas to seal the fissures or pits, and then locked into the enamel structure by setting with a curing lamp.
- If any demineralisation of the fissure is present, one of the alternative materials listed above is used to replace the enamel surface.

**Figure 1.2** Fissure sealant instruments and materials

**Figure 1.3** Tooth isolation techniques
BACKGROUND INFORMATION OF PROCEDURE – TOPICAL FLUORIDE

Other very difficult to clean areas of the teeth are the points where they have contact with each other in the dental arch – the interproximal (interdental) areas.

There are certain oral health products available specifically for cleaning these areas, such as dental floss and interdental brushes, but they require a certain amount of dexterity and determination by the patient to be used effectively.

All fluoridated toothpastes provide some protection of these areas from caries, but some patients require additional full mouth fluoride protection by the professional application of a topical fluoride varnish or gel.

They are:

- Children and vulnerable adults with high caries rates
- Physically disabled patients who are unable to achieve a good level of oral hygiene
- Medically compromised patients for whom tooth extractions are too dangerous to be carried out (haemophiliacs, patients with some heart defects)

DETAILS OF PROCEDURE – FULL MOUTH TOPICAL FLUORIDE APPLICATION

A high concentration of fluoride is required to be applied to the interproximal areas that is viscous enough not to be washed away quickly by saliva, so that it can be taken into the enamel structure of the tooth and make it more resistant to caries. The usual material used is a sticky fluoride varnish or gel, such as that shown in Figure 1.4.

Figure 1.4 Fluoride gel for professional application – Duraphat
Preventive techniques

**TECHNIQUE:**
- The operator and the patient wear suitable personal protective equipment
- The teeth are polished with a pumice slurry to remove any plaque present and allow the maximum tooth contact with the fluoride
- The polish is thoroughly washed off and the teeth are dried
- Adequate soft tissue retraction and moisture control are provided by the dental nurse, so that the dry tooth surfaces are accessible and the gel will not be displaced by accident during the procedure
- The viscous fluoride gel is manually applied to all available surfaces of each tooth, using one or more applicator buds and one arch at a time

**DETAILS OF PROCEDURE – SPECIFIC TOOTH TOPICAL FLUORIDE APPLICATION**

In some patients, individual teeth may show signs of previous acid attack from certain foods and drinks as a ‘brown spot’ lesion on the enamel surface (Figure 1.5). Other patients may have gingival recession present, which exposes the root surface of a tooth to dietary acids and sugars, therefore making it vulnerable to attack by dental caries (see Figure 5.8). These specific areas can be protected by the direct application of a localised fluoride varnish such as that shown in Figure 1.4, using a similar technique to that of a full mouth application as described earlier.

![Figure 1.5 Brown spot lesion indicating previous enamel damage](image)
Oral hygiene instruction is given to patients to ensure that they are maximising their efforts to remove plaque from their teeth, to minimise the damage caused by periodontal disease and caries.

Dietary advice is also given to help patients avoid foods and drinks that are particularly damaging to their teeth – those high in refined sugars or those that are acidic.

When the advice is correctly followed on a regular basis, the patients can enjoy a well cared for and pain-free mouth, as well as avoiding the expense of reparative dental treatment.

The procedures discussed are:

- Use of disclosing agents
- Toothbrushing
- Interdental cleaning

Disclosing agents are harmless vegetable dyes supplied in liquid or tablet form and in various colours, usually red or blue (Figure 2.1).

They act by staining any plaque on the tooth surface to their own colour (Figure 2.2), thus making it far easier to show the presence and location of the plaque to the patient, as plaque is normally a creamy white colour and may be difficult to see otherwise (Figure 2.3).

Once stained, suitable oral hygiene instruction can be given to remove the plaque effectively. The dyes do not stain the teeth themselves, nor any restorations.
DETAILS OF PROCEDURE – DISCLOSING AGENTS

The agents can initially be used at the practice by the oral health team so that the correct problem areas can be identified and suitable cleaning advice given. The patient can then use the agents at home to check their progress on a regular basis. The commonest agents used are disclosing tablets.
Figure 2.3 Appearance of undisclosed gingival plaque

**TECHNIQUE:**
- A protective bib is placed over the patients so that their clothing is not inadvertently marked
- The patients are given one disclosing tablet and asked to chew it for about 1 min
- After this time, they are asked to spit out the chewed tablet and saliva, but are instructed not to rinse their mouth out
- Using a patient-mirror, any stained plaque is pointed out by the oral health team and the worst areas noted (very often the gingival margins)
- Detailed advice is then given on how to improve their tooth brushing and cleaning techniques to eliminate the plaque from these areas
- The patients can follow these instructions immediately so that all the stained plaque is removed while under the supervision of the oral health team
- With the plaque easily visible due to the disclosing agent, the patients are able to see their own progress and develop the skill to maintain good oral hygiene

**BACKGROUND INFORMATION OF PROCEDURE – TOOTHBRUSHING**

Toothbrushing is the commonest method used by patients to remove plaque from the easily accessible flat surfaces of the teeth, but not from the interdental areas.

Many toothbrushing techniques have been suggested over the years – especially side to side brushing and rotary brushing – but the technique used is immaterial as long as the plaque is removed successfully without causing damage to the tooth surface. Disclosing agents can be used to determine the most successful method for a patient.