FDI DRAFT POLICY STATEMENT

Carious Lesions and First Restorative Treatment

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CONTEXT

In 2016, FDI approved a revised version of the Policy Statement on "Minimal Intervention in the Management of Dental Caries" (2002) which recognized that "an operative ('surgical') approach should only be used when specifically indicated, e.g., when cavitation is such that the lesion cannot be arrested, or when there are aesthetic or functional requirements[1]." The aim was to encourage a shift from a restorative approach of dental caries management to the delivery of preventive dental medicine[2]. Yet in spite of this effort, uptake in daily clinical practice so far has been slow.

SCOPE

This policy statement gives guidance on treatment of caries in deciduous and permanent teeth differentiating the concepts of caries arrest and minimally invasive restorative concepts.

DEFINITIONS

(See also ICDAS system)

Initial carious lesion

Non-cavitated carious lesion limited to visual change in enamel colour and texture

Moderate carious lesion

Carious lesion limited to the outer third of dentine and micro cavitated carious lesions

Severe carious lesion

Carious lesion extending beyond the outer third of dentine and cavitated carious lesions

Active carious lesion

Carious lesion exhibiting net mineral loss over a period of time indicating that the lesion is progressing.

Inactive carious lesion

Carious lesion exhibiting no net mineral loss over a period of time indicating that the lesion is not progressing.

PRINCIPLES

It is fundamental to good practice that patients receive appropriate dietary advice and education about effective biofilm management.

Reduce tissue removal treatment of carious lesions in both deciduous teeth and permanent teeth in order to save tooth substance, prolong the life of a tooth and reduce or avoid negative iatrogenic outcomes such as pain, anxiety and adjacent tooth damage.

Tissue removal decision must consider the lesion stage, its activity, the patient's condition and caries risk and aesthetic demands. In cases where tissue removal is deemed necessary, minimum intervention approaches should be followed.

POLICY

FDI World Dental Federation supports a shift in caries management from restorative treatment to measures that arrest and prevent caries development including monitoring, following the concepts of International Caries Classification and Management System (ICCMS™).[2]

All initial caries lesions should be treated by the use of topical fluoride and monitored for progression. Further options are the use of fissure sealant in occlusal lesions and may include resin infiltration in proximal lesions into the outer third of the dentine[3]. In patients who cannot cooperate with treatment, silver diamine fluoride can be an intermediate alternative [3,4,5]. Follow up is essential in all cases.

In cases of progressive cavitation in deeper dentine, restorative treatment based on minimally invasive dentistry and selective caries removal should be considered.

All treatments must also be accompanied by control of biofilm and use of topical fluoride in addition to patient education and patient follow-up.

Clinical diagnosis of the activity of the carious lesion should take into account the location of the lesion, the surface appearance and careful tactile assessment as well as gingival health.

Type and extent of interventions depends on the patient´s individual risk profile [4,5].

Initial to moderate active or inactive carious lesions do not normally require tissue removal in the following situations:

- occlusal surface: fissure caries restricted to enamel;
- proximal surface: non-cavitated carious lesions limited to enamel and the outer third of dentine;
- smooth surface: non-cavitated carious lesions limited to the outer third of dentine and micro cavitated lesions.

Lesions should be monitored during treatment and at regular intervals thereafter.

Moderate to severe inactive carious lesions do not require tissue removal in the following situations:

- proximal surface: cavitated lesions in enamel when no tooth or prosthesis contacts the lesion;
- smooth surface: cavitated lesions in enamel and dentine when there is no aesthetic implication or any prosthesis clasp contacts the lesion.

Moderate to severe active carious lesions require minimally invasive tissue removal in the following situations:

- occlusal surface: carious lesions in dentine;
- proximal surface: cavitated lesions in enamel and dentine;
- smooth surface: cavitated lesions in dentine.

In implementing amalgam phase down, the FDI PS (2018) recommends reducing/avoiding amalgam in lesions that are suitable for other restorative materials especially in lesions receiving first restorative treatment.

Restorative materials to be considered in **primary teeth** are
• high viscous or resin modified glass ionomer cements for single and smaller multi-surface cavities, and when using the atraumatic restorative approach (hand instruments and glass ionomer cement)[6]
• resin based composite materials for larger cavities if moisture control is obtainable
• prefabricated crowns (steel or polycarbonate etc.) for large cavities in teeth with severe destruction (including Hall technique).

Restorative materials to be considered in **permanent teeth** are
• resin based materials
• high viscous glass ionomer cement or glass hybrid for single surface cavities and smaller class-II-cavities without high loading
• gold, ceramic and resin based inlays/ onlays in teeth with more destruction
• full crown in metal, ceramic and ceramic fused to alloy in teeth with severe destruction

KEYWORDS

caries, initial carious lesion, minimally invasive dentistry, restorative material, filling

DISCLAIMER

The information in this Policy Statement was based on the best scientific evidence available at the time. It may be interpreted to reflect prevailing cultural sensitivities and socio-economic constraints.

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