All that Glitters is Gold

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Abstract

This article aims at rekindling the lost lustre from the age old gold restoration, recreating wonderful restorations lasting over many decades in the oral cavity and rehashing the unique importance of using gold foils and EZ gold as a restorative material in general dental practice as a feasible option.

Key words: Gold foil restorations, Gold foil, Gold sheets, EZ gold, Minimal cavity preparation, Everlasting restorations, Minimal marginal leakage.

Introduction

Mayans, as early as 2500 BC were creative in handling precious metals like gold and silver. Gold has been used for thousands of years to adorn and restore teeth in royal families interspersed with other precious gems studded on the teeth. Romans are credited with the skilled usage of restoring large cavities with gold crowns and restorations.

Gold, a noble metal with unique properties of being ductile and malleable can be easily used to fill cavities. The biocompatibility of gold is another advantage as it has least interference with any other metal along with being oral cavity friendly. Various dentists' credited with the usage of gold as a restorative material and inventing instruments exclusively for the clinical works are as follows:

Dr. W.I. Ferrier – who developed a number of hand instruments, various modifications in cavity designs and operational procedures

Gregory E. Smith – who developed direct gold restorations

Dr. Gerald D. Stibbs – who developed advanced gold foil techniques

Dr. Bruce Brownfield Smith – who was the Founder and President of American Academy of Gold Foil Operators

In recent times aesthetic dentistry has gained immense importance with major focus on tooth coloured restorations. Keeping the trend of quality dental care and value for money, gold restorations still score over amalgam restorations and composite resins with major focus on the various advantages such as

- Biocompatibility
- Does not discolor the teeth
- Sterile and antibacterial restoration
- Finest margins without any micro-leakage
- Conserves and protects the dental tissues
- Has good compatibility with enamel and dentine thereby expanding and contracting with the tooth

The various indications where direct gold restorations are the first option for consideration are

- Class I direct gold restorations
- Small carious lesions in pits and fissures of posterior teeth
- Lingual surfaces of anterior teeth
- Small, cavitated Class V carious lesions
- Abraded, eroded, or abfraction areas on the facial surfaces of teeth
- Class III direct gold restorations on the proximal surfaces of anterior teeth where the lesions are small enough to be treated with esthetically pleasing results
- Class II direct gold restorations are an option for restoration of small cavitated proximal surface carious lesions in posterior teeth in which marginal ridges are not subjected to heavy occlusal forces (eg: the mesial or distal surfaces of mandibular first premolars and the mesial surface of some maxillary premolars)
- Class VI direct gold restorations especially on the incisal edges or cusp tips
- A defective margin of an otherwise acceptable cast gold restoration also may be repaired with direct gold.

The various contraindications to be considered before suggesting a direct gold restoration for the patient are

- Teeth with extensive caries and weakened walls
- Very young patients with incomplete root formation
- Periodontal membranes are too thick
- Extensive alveolar bone recession
- Non-vital teeth as they are brittle and can't handle the malleting force
- Psychological temperament of patients not conducive to malleting
- Very large pulp chambers especially in newly erupted teeth or deciduous dentition
- Severely periodontally weakened teeth with questionable prognosis
- Economics is a severely limiting factor
- Handicapped patients who are unable to sit for the long dental appointments required for this procedure.
- Root canal–filled teeth are generally not restored with direct gold because these teeth are brittle, although in some cases gold may be the material of choice to close access preparations (for root canal therapy) in cast gold restorations
- Tooth where rubber dam placement is difficult
- Patients who are unwilling to sit or spare time for relatively long appointments

Gold foil material when carefully manipulated, placed as a restoration, finished and polished can be as close to the tooth minimizing the marginal gap between the tooth and the restoration, thus preventing secondary decay, leak of body fluids into the restoration, staining of teeth and further degradation of the healthy tooth tissue. The clinical technique of gold placement requires addition training and protocol based restoration using cavity preparation guidelines, usage of rubber dam, and manipulation of gold, proper storage of the gold pellets, with proper case selection.

Conclusion

Gold restorations definitely do have an honorable place in restorative dentistry. A revival of the art of handling gold in everyday clinical setup will provide a lifelong maintenance free oral cavity for the patient and value for the money spent in having direct gold restorations. The dentist can be rest assured of an intact leak free restoration promising a stress free dentistry.

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