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Current Trends in Aesthetic Dentistry

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ABSTRACT

The level of aesthetic requirement in clinical practice has increased over the past decade, and this has made it necessary for dentist to explore this field in order to satisfy the existing demand in this field. Technology can provide a solution to many of the routine hassles in dental practice.

INTRODUCTION

Dental materials have special requirements. For health reasons, dental materials should be suitable for use in the oral environment. In certain applications, strength and durability of a dental material is important to ensure satisfactory performance. In some other situations, the aestheticcomponent would be more important.

Aesthetic dental appearance of teeth is one of the patients demands. This helped in the evolution of aesthetic restorations, including the use of resin-based composite materials. Restorative dentistry is a major speciality in practical clinical dentistry. In order to treat dental caries, we need to excavate the pathology and restore the cavity with a proper dental filling material. One of the options is the use of light polymerised direct tooth coloured restorative materials. With its success rate in an increasing scale, composite restoration is being more and more used in restorative dentistry field.

DENTAL COMPOSITES

“Composite” refers to a mixture of different materials. Dental composites are tooth coloured filling materials composed of synthetic polymers, particulate ceramic reinforcing fillers, molecules which promote or modify the polymerisation reaction that produces the cross linked polymer matrix from the dimethacrylate resin monomers, and silane coupling agents which bond the reinforcing fillers to polymer matrix. Every component has a different function and contributes towards the success of final dental restoration. However, the most significant developments in the evolution of commercial composites to date have been direct results of modification to the filler component. Fillers are used to provide strengthening, increase stiffness, reduce dimensional change when heated and cooled, reduced setting contraction, enhance aesthetics, and improve handling.

Advantages:

- Dental composites are aesthetic and relatively less expensive.
- Less time consuming.
- Self- sealing.
- Easily be repaired.

Disadvantages:

- Tooth sensitivity.
- Method of application is technique sensitive.
- Tend to shrink when hardened.
- Wear faster than dental enamel.

CERAMIC CROWNS

Ceramics are replacing metals as materials of choice in dental crowns, as well as in other biomechanical prosthesis. Although alumina-based crowns continue to replace metal-based crowns, failure rates remain an issue. Clinically, bulk fractures are the reported cause of all ceramic crown failure whether the crown is a monolith or a layered structure. Failure generally does not result from damage at the occlusal surface, but rather from subsurface radial cracks at the cementation interface. The radical cracks are initially contained within the inner core layer, but subsequently propagate to the core boundaries, ultimately causing irretrievable failure.

Advantages:

- Low thermal conductivity.
- Good aesthetic result.
- Resistant to corrosion.
- No galvanic reactions.
- Most biocompatible materials.

Disadvantages:

- Expensive.
- Technique sensitive.
- Requires removal of considerable amount of sound tooth structure.
- Excessive wear of opposing tooth.

CERAMIC VENEERS

As patients aesthetic expectations continue to increase, dental teams are challenged to identify a systematic approach for achieving natural oral and facial aesthetics with ceramic veneers. Advances in ceramic materials and veneering techniques allow practitioners to restore function and aesthetics using conservative and biologically sound methods as well as promoting long term oral health. Aesthetics, treatment planning, and clinical care should be considered in accordance with the interrelationship between the teeth, gingival tissues, lips, and face. Consideration as to how the facial and psychological parameters can influence a natural smile design must also be taken into account. Because ceramic veneers are primarily indicated for the improvement of aesthetics, the design of the smile should respect the symmetry and the harmonious arrangement of dento-facial elements. The patient is often the final judge of restorations in aesthetically driven treatment.

Advantages:

- Extremely natural looking.
- Porcelain and tooth enamel are both white and translucent.
- Stain resistant.
- Very durable.

Disadvantages:

- They have a potential to break.
- It is not a reversible process.
- Porcelain veneer procedure is more expensive than composite dental veneers.
- Increased tooth sensitivity.

CONCLUSION

Dentist and dental technicians must be aware of the current technologies in their fields and be able to use it to their and their patients advantage. The objective of this article is to review the advantages and disadvantages of recent aesthetic materials and technology to aid in the proper utilisation of the available treatment options with discretion.

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