

“Selection of ceramic system for anterior restorations according to underlying tooth substrate”



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Objectives

To offer guidance in selecting the appropriate all ceramic system for veneers and crowns depending on the color of the anterior tooth substrate.

Materials and Methods

Clinical cases with different underlying tooth substrates are presented. Clinical steps from initial situation, tooth preparation, ceramic material selection and final situation are analyzed. Emphasis is given on the optical and mechanical properties of the ceramic materials, in accordance with the level of discoloration of the abutment teeth. The underlying tooth substrate was divided in three categories depending on the degree of the discoloration.

Clinical Cases

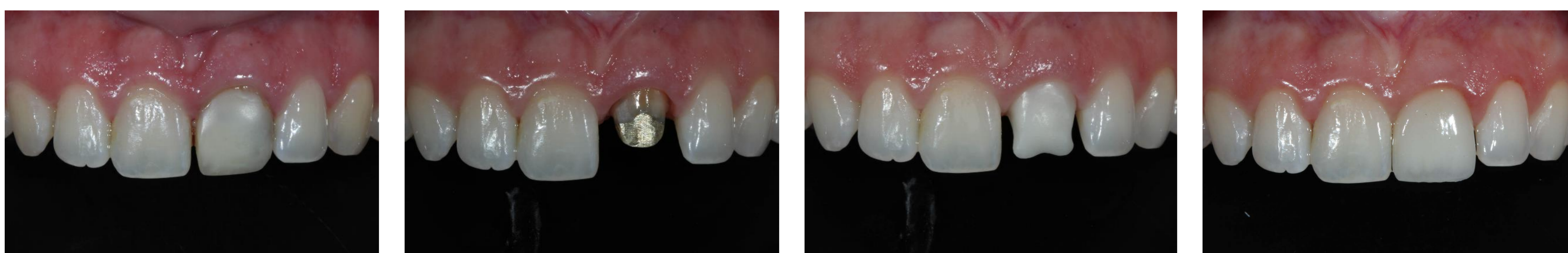
Category 1: No discoloration. Ceramics with high translucency (feldspathic, high translucency lithium disilicate) were reserved for clinical applications in which enamel and/or dentin substrate had acceptable color and the restoration could be bonded to tooth structure. Feldspathic veneers were chosen in cases of enamel preparation, whereas lithium disilicate was preferred when also dentin was exposed.



Category 2: Mild or moderate discoloration. Medium opacity ceramic materials were chosen in these case, including veneers and crowns. The material of choice was lithium disilicate.



Category 3: Severe discoloration or metal substrate. When there is need for masking severely discolored teeth or metal substrates, ceramics with opaque core (zirconia, lithium disilicate high opacity) were chosen. These ceramics show high mechanical properties but pose a challenge when trying to match with natural tooth color.



Results

Following the guidelines for the final esthetic outcome, the color of the abutment teeth and the optical properties of the ceramic systems, restoration of anterior teeth from simple to more complex cases could be completed successfully and predictably. Knowing the indications and the limitations of the available ceramics is a key factor for the treatment planning of cases with high esthetic demands.

Conclusions

As available ceramic systems increase and evolve, practitioners must have knowledge of their optical and mechanical properties so as to make appropriate choices when faced with various esthetic challenges.

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