Natural Aesthetics:

The Importance of Preparation Design and Provisionalization

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The restorative techniques and materials used in aesthetic dentistry continue to evolve, allowing dental professionals to achieve natural results with increasing predictability. Combining meticulous preparation with accurate provisionalization in a strict treatment protocol is vital to the clinical success of the restoration and aesthetic enhancement of teeth. While material selection may vary among clinicians, one constant that each follows is the treatment protocol itself. The foundation of a functionally sound restoration and its longevity is intricate treatment planning.

Clinical Vignette

1. A 60-year-old female patient presents with wear on the incisal edges of teeth #6 through #11. The teeth are also structurally uneven. The patient requests aesthetic enhancement using porcelain laminate veneers.

FIGURE 1.

2. An assessment of the health of the patient's teeth and gingival tissue is made. Correction of the gingival symmetry is necessary. Steps to a proper treatment plan, which includes tissue contouring with a diode laser, are devised.

FIGURE 2.

3. After determining the desired amount of free gingiva and marking the gingival zenith, a diode laser is applied in a sweeping motion, contouring to correct the tissue level.

FIGURE 3.

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4. The facial surfaces of teeth #6 through #11 are reduced with depth cuts at three planes of reduction, which may range from 0.5 mm to 0.8 mm depending on the type of depth-cutting bur used.

5. A round diamond bur is used to create a marginal outline that leads up to and follows the contours of the gingival tissue. This will produce an acceptable chamfer margin.

6. A pear-shaped diamond bur is then used to remove 1 mm of the incisal edge. A guide for reduction is established first by creating three depth cuts on the incisal edge of each tooth.

7. The interproximal contacts are broken, and the spaces are expanded with a long, tapered fine-diamond bur. A round-end taper bur joins the previous depth-cut grooves by removing a uniform thickness of facial surface. The surface area is smoothed.

FIGURE 4.

FIGURE 5.

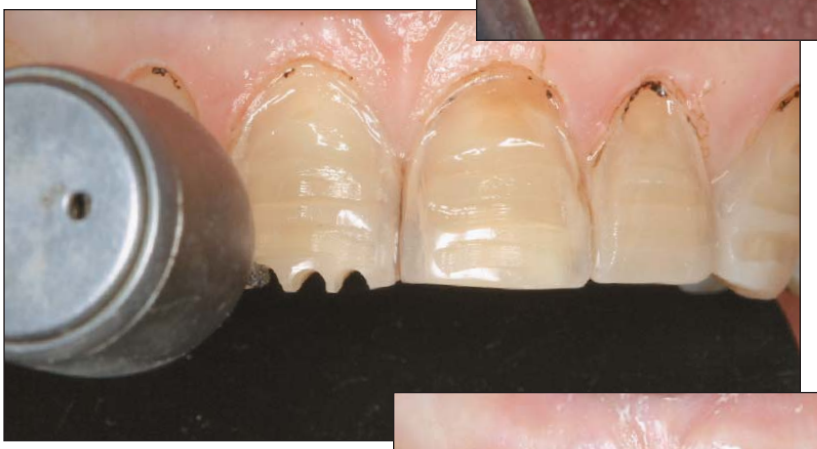

FIGURE 6.

FIGURE 7.

FIGURE 8.


FIGURE 9.


FIGURE 10.


FIGURE 11.

8. Tooth-shaped dentin-shade tabs of varying hues are used to determine the underlying tooth color. The resulting shade(s) is then recorded with color photographs and forwarded to a laboratory for processing.

9. Provisional veneers are fabricated and shrink-wrapped to place. Excess bis-acryl material is removed from along the gingival tissue. The margins are also contoured down to the surfaces of the teeth with a carbide bur.

10. The provisionals, bite registration, and overall structure are assessed. Any areas that need modification, such as the occlusal plane, are noted. The provisionals integrate with the gingival tissues.

11. Using a wheel or disc-shaped polisher, the incisal edges are smoothed. A flat instrument can be used to separate any teeth that have been bonded together. A natural luster is rendered for the restorations using various abrasive polishers.

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12. In order to maintain longevity of the veneer restoration, all the surfaces of the teeth need to be finished to a smooth surface. Using polishing cups, the veneer can be further refined.

13. As a final finishing touch, a carbide bur is used to adjust the marginal precinct.

14. The fully restored and polished veneers now present a very natural look.

15. Approximately 1 week postoperatively, the patient displays no abnormal discomfort. The patient was pleased with the aesthetic enhancement. The patient is instructed with the care and maintenance of the restoration to prolong its life.

FIGURE 12.

FIGURE 13.

FIGURE 14.

FIGURE 15.