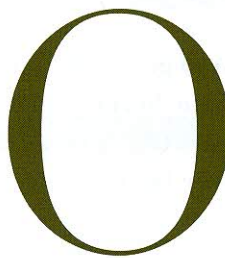


## Cosmetic Concerns Provide Opportunity for Comprehensive Dentistry

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### ABSTRACT

This case involved a woman with occlusal dysfunction who was dissatisfied with her smile because of the unsightly display of gold crowns in her posterior and unattractive mottling on her anterior teeth. Factors such as a significant history of clenching and grinding, the management of active disease and infection, and the patient's desire for an ideal or "media-generated" smile increased the difficulty of the case. As part of a comprehensive restorative plan that included disease control treatment, root canal therapy, and orthodontics to idealize tooth positioning, a Kois deprogrammer was used to evaluate the patient's increasingly symptomatic, unacceptable function. In addition to reducing functional and biomechanical risks, the case resulted in improved esthetics with which the patient was highly pleased.



Often times patients seeking cosmetic improvements are unaware of other possible oral problems that may potentially be contributory to their esthetic issues. A thorough analysis of the patient's oral condition can frequently lead to the realization that functional and biomechanical problems are prevalent. By performing a systematic assessment of not only the patient's cosmetic condition but also the patient's dental health risks and any active disease, a clinician can develop a comprehensive restorative treatment plan.

### CLINICAL CASE OVERVIEW

A 44-year-old woman presented for evaluation and improvement of her smile. Her chief complaint was the unattractive gold display of her posterior crowns coupled with unsightly "white spots" on her anterior teeth (Figure 1 and Figure 2). Her compelling purpose for seeking treatment was to achieve a "great smile."

The patient's medical history was noncontributory. In discussing her dental history, it was discovered that she had a significant amount of clenching and grinding, with reported nightguard use for more than 10 years. She experienced frequent morning headaches with or without the use of the nightguard. The patient also reported that tooth decay was a common finding at her dental examinations. She had previously been diagnosed and treated for periodontal disease but had inconsistent follow-up care. A comprehensive assessment was initiated to thoroughly evaluate her condition and provide predictable options for her care.

### DIAGNOSTIC FINDINGS

**Periodontal:** The periodontal evaluation revealed probing depths of 2 mm to 3 mm in the anterior sextants and 2 mm to 5 mm in the posterior sextants. Generalized light bleeding on probing was noted in the posterior. Radiographic examination

revealed generalized mild to moderate horizontal bone loss of 1 mm to 3 mm. A vertical osseous defect was discovered on the mesial of tooth No. 15 with an associated probing depth of 5 mm (Figure 3). A periodontal diagnosis of AAP type II (mild periodontitis) was made.

**Risk:** Low

**Prognosis:** Good overall with a site-specific fair prognosis for tooth No. 15 due to the mesial vertical bony defect.

**Biomechanical:** The radiographic examination identified apical pathology on teeth Nos. 2 and 15 (Figure 3 and Figure 4). A diffuse, mixed radiographic lesion (Figure 4) was visible apical to teeth Nos. 3 and 4, having an appearance consistent with a mucous retention cyst.<sup>1</sup> Clinically, teeth Nos. 2 and 15 both tested nonvital, while teeth Nos. 3 and 4 tested vital. Active tooth decay was found on teeth Nos. 15, 19, and 28. Teeth Nos. 2, 3, 12 through

15, 28, and 31 had defective, ill-fitting restorations. Teeth Nos. 2 through 4, 13 through 15, 18 through 20, and 29 through 31 were noted as structurally compromised due to the size, type, and depth of the restorations. Additionally, teeth Nos. 23 through 26 showed early signs of chemical erosion on the incisal edges. Tooth No. 3 presented with a bony exostosis on the buccal (Figure 5), creating short clinical crown height and a subsequent restorative compromise.

**Risk:** High

**Prognosis:** Poor with a hopeless prognosis for teeth with untreated tooth decay.

**Functional:** With most of the patient's posterior teeth having been restored with crowns (Figure 6 and Figure 7) it was important to interpret the patient's history and occlusal findings closely. The gold crowns on teeth Nos. 2 and 5 had holes worn in the occlusal surfaces with evidence of minimal wear on her other posterior crowns and natural dentition. Moderate wear was evident on the gold crown on tooth No. 31. A diagnosis of acceptable function could not be considered due to her long-term history of clenching and grinding, more than 10 years of nightguard use, joint sounds, and morning headaches. At the time of examination, she presented with tenderness to palpation of the right joint lateral pole rated at "5" on a scale of 1 to 10.<sup>2</sup> Right masseter and temporalis muscles were also tender, with a rating of "5." Load and resistance tests were normal. The right joint popped on opening with moderate intensity and had mild crepitus. There was no deviation on opening, and the range of motion was well within normal limits. Primary occlusal traumatism was noted on teeth Nos. 4 and 13. Teeth Nos. 6 through 11 and 22 through 27 were not touching in maximal intercuspation. Teeth Nos. 3 and 30 as well as Nos. 14 and 19 were in cross-bite (Figure 5 and Figure 8). The patient had an Angle's Class I occlusion. A diagnosis of occlusal dysfunction was made given the history and examination findings.

**Risk:** Moderate

**Prognosis:** Fair

**Dentofacial:** Evaluation of the patient's smile revealed medium maxillary lip dynamics and tissue display in a full smile (Figure 2). Uneven maxillary gingival levels, visible buccal bony exostosis on tooth No. 3, rotated and malposed teeth, mottling on multiple front teeth, a "reverse smile line," tooth asymmetry, and an uneven maxillary occlusal plane were all significant findings in the dentofacial evaluation. The patient's desire for an ideal or "media-generated" smile increased the case difficulty. The medium maxillary lip dynamics and subsequent tissue display created the risk evaluation for the case.

**Risk:** Moderate

**Prognosis:** Fair



Fig 1.



Fig 2.

**Fig 1.** The patient was unhappy with her smile. **Fig 2.** The patient's smile before treatment. Note the tooth mottling, gold display, uneven tissue levels, and malposed teeth.

