



A CASE REPORT.

Anterior Esthetic Restorative Treatment of Idiopathic Dental Pathology.

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Taking teeth out is the only thing that we do in dentistry that is permanent. For this reason, every effort is made during the care of our patients to provide minimally invasive treatment options and to preserve the dentition. For some of these patients, however, extraction of one or more teeth is an unfortunate necessity. Specific situations that involve the restoration of the patient's anterior dentition and/or soft-tissue defects require a carefully coordinated effort between the clinician and the ceramist.

In March of 2017, a 32 year old male patient presented for a consultation with chief cosmetic concerns regarding the ongoing and unexplained deterioration of hard and soft tissue structures around the maxillary right lateral and central incisors (Fig.1). The patient reported little to no discomfort at the affected site. A full medical and dental history was reviewed for the patient and found to be unremarkable. At the time of the initial visit, the intraoral evaluation revealed pink composite resin had been applied by another provider to temporarily aid as a splint and to mask the loss of interdental papilla that were evident when the patient smiled. Radiographic evaluation utilizing cone beam volumetric tomography (Fig.2) revealed significant horizontal and vertical loss of osseous scaffolding around the maxillary right lateral and central incisors. Prior consultations with multiple specialists, including oral surgeons

and periodontists, were unsuccessful at determining a cause for the current pathological findings.

Diagnostic alginate impressions and shade photos of the dentition and gingiva (Fig.3) were sent to the ceramist prior to beginning treatment. Treatment planning for this case involved the extraction of the maxillary right central and lateral incisor, simultaneous bone graft/membrane placement and restoration of the edentulous space with a layered Zolid HT+ white zirconia 4-unit fixed dental prosthesis.

Following the removal of the failing dentition, provisionalization with a temporary prosthesis and an appropriate healing phase of approximately 4 months, the tooth preparations (stumps) were analyzed for shade (Fig.4). Even though a zirconia framework was being utilized for the definitive restoration, it was critical to assess the foundational color of each stump- due to the conservative hard tissue reduction of each tooth and the highly translucent nature of the zirconia ceramic being used for this particular case. Upon completion of the final VPS impressions, the zirconia framework was milled, stained, and sintered at the dental laboratory (Fig.5). To verify accuracy of fit and seamless margins of the restoration, the framework was evaluated both in-situ and radiographically during a try-in visit (Fig.6). The framework was returned to the laboratory for final

keywords

- Shade communication
- Fixed dental prosthesis
- Zolid HT+ White



Fig.1: Initial situation: pathological and unesthetic anterior dentition



Fig.2: Cone beam volumetric scan of premaxillary defect



Fig.3: Shade communication: white + pink tissue



Fig.4: Tooth preparations + stump shade analysis



Fig.5: Amann Girrbach Zolid HT+ zirconia framework



Fig. 6: Framework try-in visit and radiographic verification of fit



Fig. 7: Definitive restoration: 4-unit layered fixed dental prosthesis



Fig. 8: Definitive restoration: retracted view and full smile

ceramic layering, staining, and glazing (Fig. 7). Once complete, the final prosthesis was tried in and evaluated for fit, function, and phonetics. Upon the approval of the patient, the intaglio of the definitive restoration was sand-blasted for 10 seconds with 50 micron aluminum oxide particles at 2 bar of pressure, placed in a 91% isopropyl alcohol ultrasonic bath for 5 minutes, dried and luted utilizing a resin-modified glass ionomer cement. The loss of permanent teeth is a common occurrence and represents a deep psychological and emotional event for most individuals. However, uncommon final results (Fig. 8) are

possible through careful treatment planning and meticulous collaboration between the restorative dentist, surgeon, ceramist and ultimately the patient. ///

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