

Recreating Gingival Contours with an Ovate Pontic: Case Report

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Abstract: A pontic serves as an artificial replacement for a missing tooth within a fixed partial denture and plays a crucial role in restoring oral function and aesthetics. Its design must consider several factors, including appearance, function, ease of cleaning, patient comfort, and the preservation of the edentulous ridge. Among various designs, the ovate pontic is highly regarded for its ability to fulfill both aesthetic and functional demands. Characterized by its convex tissue-contacting surface, the ovate pontic is designed to sculpt a concave outline in the alveolar ridge mucosa. This unique contour helps eliminate the unaesthetic “black triangle” often seen following tooth loss, particularly due to the resorption of the interdental papilla. When executed with proper hygiene and plaque control, the ovate pontic site can maintain healthy tissue conditions over time.

Despite its numerous advantages, the ovate pontic design is not widely implemented in routine clinical practice, often due to the additional technique sensitivity and planning it requires. The present case highlights the application of a modified ovate pontic to replace an lower anterior tooth, demonstrating how this design can achieve a harmonious blend of aesthetic excellence and periodontal health when carefully planned and executed.

Keywords: Ovate pontic, Emergence profile, Fixed partial denture esthetics, Anterior esthetics, Pontic site optimization

Introduction: The replacement of missing anterior teeth poses a significant aesthetic challenge in fixed prosthodontics. Soft tissue recession and alveolar bone resorption after extraction can compromise aesthetics. Preserving the extraction socket’s dimensions and gingival contour is crucial for favorable outcomes.¹

An ovate pontic design addresses both aesthetic and functional needs by shaping the alveolar ridge mucosa to mimic natural tooth emergence. Its convex form supports papilla preservation and creates a lifelike appearance.²

Additionally, the ovate pontic enhances cleansability, making it a hygienic and effective solution for

restoring tissue harmony and achieving long-term aesthetic success in prosthodontic rehabilitation.^{1,2,3}

Case History: A 48-year-old male patient reported to Department of Prosthodontics with chief complaint of a mobile mandibular anterior tooth for which he desired replacement for enhancing esthetic. On examination, it was observed that mandibular right central & left central & lateral incisor, was grade III mobile & root stump of left central incisor (Fig.1). Radiograph showed a short carious root stump which was not amenable for a post and core restoration (Fig.2).

Due to poor prognosis, mobile teeth & root stump were extracted and replaced with a modified ovate

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pontic for optimal form, function, and aesthetics.

Diagnostic impressions (Prime Dental Alginate Impression Material) were made; mock preparation and diagnostic wax up were done for case evaluation (Fig.3). Putty index in silicon (Zhermack Zetaplus Putty Impression Material) was made with help of wax up to guide tooth preparation and fabrication of provisional prosthesis (Dpi Selfcure Tooth Moulding Powder) (Fig. 4).⁷

An irreversible hydrocolloid (Prime Dental Alginate Impression Material) and cast were made to evaluate pontic space. The cast was scraped, depth set by CEJ and IOPA. A polished provisional bridge was fabricated using cold-cured acrylic and a putty index (Fig.4).⁸

Tooth preparation to receive a complete metal ceramic FPD was carried out for 33 and 43 as abutment teeth with chamfer finish margin. Extraction of root stump (31) & grade III mobile teeth (32,41,42) was done with help of microtome to preserve buccal and lingual plates and interdental papilla (Fig.5).⁸

After hemostasis and clot formation modified ovate pontic was adjusted to 3 to 4 mm into the socket to support the bone and soft tissue contour. Cementation of the provisional restoration was done with help of eugenol-free interim luting agent (Fig.6).

Extraction and immediate placement of the provisional restoration would allow the soft tissue to be supported by ovate pontic. The provisional restoration was refined to ensure marginal fit and contour.

The tissue condition both at the abutment teeth and the pontic were monitored after 1 week, 1 month (fig. 7a & 7b).

At each recall, the provisional was removed to check soft tissue health. Healthy, pink tissue without ulceration was expected, and the pontic surface was

polished at every visit.

Then again finished the chamfer margin & then did gingival cord retraction (Gingi-Pak Dental Gingival Retraction Cords) & made putty light body final impression (Zhermack Zetaplus Putty Impression Material) to produce a definitive cast with type IV dental stone (Pearlstone Dental Die Stone Type IV) that will allow the dental laboratory technician to fabricate the FPD framework (Fig.8).

The FPD framework was tried in, space checked, light body added to intaglio surface, and a final pick-up impression (Fig.10a & 10b) made to capture natural emergence profile (Fig.9).^{8,9}

Final metal-ceramic fixed partial denture was delivered, achieving optimal esthetics, tissue harmony, and functional integration through the use of an ovate pontic design (Fig.11b).

Discussion: The demand for natural-looking tooth replacements has led to techniques enhancing soft tissue aesthetics, notably the ovate pontic, introduced by Abrams in 1980.⁹ It is effective in fixed and removable partial dentures, as well as implant prostheses.

The fabrication of an ovate pontic offers several advantages, particularly in achieving superior aesthetic outcomes. Its design creates the illusion of a tooth emerging naturally from the gingiva, enhancing the emergence profile and promoting the preservation or regeneration of the interdental papilla. This results in a more lifelike appearance, especially in the anterior region. Additionally, the convex tissue-contacting surface encourages a healthy soft tissue response and allows for improved hygiene maintenance when properly contoured.^{4,8}

However, there are certain disadvantages to consider. Fabrication requires precise planning and may necessitate surgical modification of the ridge to create a suitable ovate receptor site, which can increase clinical complexity and treatment time.

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Furthermore, the healing period must be carefully managed to ensure tissue shaping is successful. Improper design or inadequate tissue support may

compromise the final aesthetic and functional result. Thus, the success of an ovate pontic relies heavily on both clinician skill and patient compliance.⁹



Fig 1_Preoperative intraoral photograph



Fig 2_Preoperative radiograph



Fig 3_Diagnostic wax up



Fig 4_Fabrication of temporary prosthesis



Fig 5_Tooth preparation of abutment tooth (34 & 43) & Extraction with 31,32,41,42



Fig 6_Cementation of the provisional restoration at same day after extraction



Fig 7a_After 1 week follow up



Fig 7b_After 1 month follow up

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Fig 8_Bisque trial



Fig 9_Natural Emergence Profile



Fig 10a_Addition Light Body On Intaglio Surface Of Ovate



Fig 10b_Final Pick Up Putty Light Body Impression



Fig 11a_Definitive Restoration Placed Intraorally.



Fig 11b_Definitive Restoration Placed Intraorally.

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