



ENHANCEMENT OF ESTHETICS BY MODIFIED OVATE PONTIC – A CLINICAL REPORT

Dentistry

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ABSTRACT

A pontic should be designed to provide a functional and aesthetic replacement for a missing tooth. A modified design for ovate pontic is proposed to achieve the esthetic, functional, and hygienic requirements for fixed partial dentures. This design should aid the clinician in preparing the edentulous area, thus resulting in less discomfort for the patient. The same emergence profile can be developed as with the classic ovate pontic design.

KEYWORDS

INTRODUCTION

Pontic design is an important aspect in fixed partial denture reconstruction.. Four basic pontic designs have been used over the years: sanitary (hygienic), ridge lap (full ridge lap, total ridge lap, modified ridge lap), and ovate.

SANITARY (HYGIENIC) PONTIC - facilitates effective oral hygiene since it does not come in contact with the ridge tissue. Patients object to the gap edentulous ridge that traps food and causes tongue irritation. It cannot be used in esthetic zone.^[1]

RIDGE LAP PONTIC - The ridge lap design provides reasonably good esthetics but removal of adherent plaque is difficult resulting in inflammation and ulceration of soft tissue.

MODIFIED RIDGE LAP PONTIC - It has a smaller concave surface and ease of cleansing causes less inflammation in the ridge contacting area as compared with the ridge lap pontic. If the edentulous ridge is not severely resorbed, acceptable esthetics can be expected.^[2]

OVATE PONTIC - The ovate pontic was created with a convex shape to overcome the disadvantage of the ridge lap or modified ridge lap. This pontic is easier to clean. However, the height of contour of the convex surface was designed close to the center of the base, and sometimes floss cannot pass through the center of pontic, especially in thin-scalloped periodontium, in which there is a longer distance from the top of papilla to the labial gingival. The convex nature of the ovate pontic was created to develop the correct emergence profile. The ovate pontic contacted a larger area of the underlying soft tissue and applied pressure on the ridge tissue, in contrast with the ridge lap or modified ridge lap pontics, which were only in contact with tissue without application of pressure. It was generally contraindicated for the thin, knife-edge residual ridge.^[3,4]

MODIFIED OVATE PONTIC - The modified ovate pontic design (Figure 1d) was developed to evade the problems encountered with the ovate pontic. The modification of the ovate pontic involves moving the height of contour at the tissue surface from the center of the base to a more labial position. The modified ovate pontic does not require as much faciolingual thickness to create an emergence profile. It is much easier to clean than ovate pontic owing to the less convex design.^[5,6]

This article highlights a technique for placing the modified ovate pontics after extraction of a tooth to preserve the soft tissues for enhancing esthetics.

CASE REPORT

A 28-year-old female patient reported to Department of Prosthodontics with chief complaint of a broken right maxillary first premolar tooth having esthetic problems. On examination, it was observed that maxillary right first premolar was grossly carious and fractured below cemento-enamel junction (CEJ) level and was not amenable for a post and core restoration. [Fig 1]



Fig 1 – Preoperative intraoral view

The patient opted for tooth supported fixed partial denture. To enhance the esthetic of this restoration, fixed partial denture with modified ovate pontic was finally planned. Tooth preparation was carried out for #13 and 15 as abutment teeth with a shoulder finish line.

Impression was taken of the prepared tooth and cast was made to evaluate the space for modified ovate pontic. Scraping the cast was carried out at the future extraction site for the modified ovate pontic. Provisional restoration was fabricated in tooth-colored heat cured acrylic resin by the indirect technique. Tissue surface of the pontic was kept highly polished so that irritation to tissue and plaque accumulation can be avoided. Extraction of #14 root was done in a atraumatic way to preserve the buccal and lingual plates and interdental papilla. After hemostasis and clot formation modified ovate pontic was adjusted to 2 mm into the socket to support the bone and soft tissue contour. It was more labially placed on ridge than ovate pontic. Cementation of the provisional restoration was done with help of eugenol-free interim luting agent. [Fig 2]



Fig 2- Provisional Restoration.

The tissue condition both at the abutment teeth and the pontic were monitored after 1 week, 1 and 3 months. At each visit, the modified ovate pontic was polished on the tissue surface. Final impressions of the prepared tooth were made with polyvinyl siloxane (3M ESPE) for fabrication of zirconia framework after a time interval of 3 months. The dies were trimmed and digitized using CAD-CAM software (CEREC, Sirona, Germany) for manufacturing the zirconia framework. The veneering porcelain was added to the framework to complete the bridge. The three unit zirconia bridge was cemented with dual cure resin cement (Multilink, Ivoclar Vivadent). [Fig 3]



Fig 3 – Postoperative intraoral view.

DISCUSSION

A pontic should be designed to provide a functional and aesthetic replacement for a missing tooth. The location of the missing tooth, either anteriorly or posteriorly, will determine which of these factors has the greater emphasis in an individual situation.

The modified ovate pontic has less soft tissue-contacting surface and less curvature than the ovate pontic. This modified pontic fulfils not only the esthetic and functional demands but also the hygienic requirements. It is much easier to clean than the ovate pontic.^[6,7]

Zirconium has a long-standing reputation for quality, durability and beauty in dental ceramics. As it has a precise technology (CAD-CAM), the cement line, which is the weak link in any ceramic system, is extremely thin, making for a very long lasting restoration. The zirconium work needs no metal framework, it is biocompatible eliminating the risk of an allergic reaction which is always a risk in the case of porcelain fused to metal crowns. And finally, the zirconium based dental work has excellent translucency, imitating the natural beauty of teeth. The porcelain fused to metal crowns are not quite as natural looking, and it can happen after years of use that a thin gray margin appears by the gumline of the crown.^[8]

CONCLUSION:

The modified ovate pontic has less soft tissue contacting surface and less curvature than the ovate pontic. This modified ovate pontic fulfills not only the aesthetic and functional demands but also the hygienic requirements. It is much easier to clean than the ovate pontic.

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