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CASE REPORT

Ovate Pontic Design: An Aesthetic Solution to Anterior Missing Tooth- A Case Report

BANERJEE R *, BANERJEE S, USHA RADKE*****

ABSTRACT

Advances in the field of restorative materials allow a lost tooth to be replaced by an artificial tooth structure that is virtually indiscernible from the original. However, in fixed partial dentures, the standards for the pontic area and the adjacent soft tissue in the maxillary anterior region have increased in particular. The pontic design in this region is primarily influenced by aesthetic and phonetic considerations. Local defects of the alveolar ridge often complicate restorative measures. Treatment methods proposed to solve this problem involve modification of the pontic design and pretreatment of the recipient site for the pontic. A valuable solution to provide a natural, aesthetic and immediate restoration is the use an ovate pontic design. The ovate pontic is a design which creates the illusion of the tooth growing out of the gum and thereby, provides with the best aesthetic outcome. The ovate pontic helps to create or maintain the interdental papilla. It is also an effective design for cleansibility and also eliminates 'black triangle' spaces.

Key Words: ovate pontic, aesthetics, receptor site, interdental papillae, provisional restoration.

* M.D.S., Sr. Lecturer, of Prosthodontics, VSPM Dental College and Research Centre, Nagpur.(India),** M.D.S., Sr. Lecturer, of Orthodontics,VSPM Dental College and Research Centre,Nagpur.(India), *** Prof & HOD, Department of Prosthodontics,VSPM Dental College and Research Centre,Nagpur.(India).
Corresponding Author:
A-103, Ganesh Towers,
Bharat Nagar, Amravati Road,
Nagpur, Maharashtra. (INDIA).
Pin Code:440033
Phone no 9890324934
E-mail: drrajlakshmi1@rediffmail.com

Introduction

One of the most challenging issues in a dental treatment plan is to preserve interproximal tissue after the removal of a tooth, which is most detrimental in the aesthetic outcome of the case [1]. The loss of an anterior tooth is a severe emotional trauma to the patient and if the replacement does not simulate the natural tooth, the effect is multifold. The ovate pontic is a design which creates the illusion of the tooth growing out of the gum and thereby, provides with the best aesthetic outcome. The provisional restoration is cemented immediately after extraction and therefore, it also gives immediate aesthetic satisfaction [2]. The ovate pontic also helps to create and maintain the interdental papilla [3]. It is also an effective design for cleansibility and also eliminates 'black triangle' spaces.

It is important to preserve the socket shape and the space of the gingival tissue in order to preserve the tissue height for post-restoration aesthetics [3]. After a tooth is extracted, the recession of the interproximal papilla and the collapse of the buccal bone must be prevented, which means that the extracted socket must be preserved in the same shape and location. It is highly important to preserve the papilla during the extraction procedure and to fill the extraction site with the provisional pontic as soon as possible.

Case Report

History

A young patient aged 30 yrs reported to the department with badly carious broken down

maxillary right central incisor. The patient was extremely concerned with the aesthetics of the possible restoration and thereby, it was planned to extract the tooth and to replace it with an aesthetic pontic design that is the ovate pontic, which would exactly simulate the lost tooth in form, function as well as aesthetics.

The Technique

Before extraction of the incisor, alginate impressions were made to fabricate study models. The abutment teeth were prepared to replace the right maxillary central incisor with an ovate pontic and an impression was made of the prepared teeth. The tooth to be extracted was scrapped off from the cast and tooth coloured acrylic resin was used to fabricate the provisional restoration which was kept ready for cementation as soon as the extraction is done.

A critical step was the extraction of the tooth. The tooth was extracted atraumatically, taking great care not to fracture the labial plate bone. A delicate tooth extraction is crucial for bone conservation as well as to preserve the interdental papillae [4]. The tissue level was evaluated and as hard and soft tissue heights were in acceptable levels, bone grafting and connective tissue build-up was not required.

Irreversible hydrocolloid impression material was used to make an impression of the extraction site after the bleeding had stopped. The cast was prepared and the edentulous site was contoured to create a proper soft and hard tissue receptor site for the ovate pontic. Acrylic resin was added to the underside of the pontic on the provisional restoration and was reseated on the cast so that the resin flowed into the socket and the restoration was relined. After the added acrylic resin was set, the restoration was removed from the cast and the pontic shape was highly polished. Then, it was cemented into place with temporary cement.

The provisional pontic was constructed in such a way that the “egg” portion was submerged about 2 to 3 mm into the extraction socket, to help in maintaining the extraction site. The patient was instructed to return within 48 hours for the removal of the temporary and for the evaluation of the extraction socket for proper healing. After evaluation, the temporary was recemented. After two weeks, the socket was revaluated for gingival contour. A series of temporary bridges was necessary to manipulate the soft tissues to recreate the ovate pontic receptor site and natural-looking interdental papillae [5]. With each new temporary bridge, the aesthetics improved as the soft tissues were compressed to help in the formation of papillae.

Maturation Of The Pontic Site

Approximately four months after extraction and the use of four provisional bridges, the soft tissues had neared maturation. A further increase in the buccal contraction was seen, giving a significant increase to the tooth length while the papillae closed the interproximal spaces almost completely.

Final Impression And Cementation

An elastomeric putty wash impression was made, dies were prepared and the final prosthesis was fabricated. In this case, the final impression for the final restoration was taken four months after the extraction. Dual-cure resin cement was selected for final cementation. The patient was instructed to clean this specific area with dental floss, so as to prevent any possible inflammatory reaction. The convex shape of the pontic allows proper cleansing of the edentulous area [6].

(Table/Fig 1)

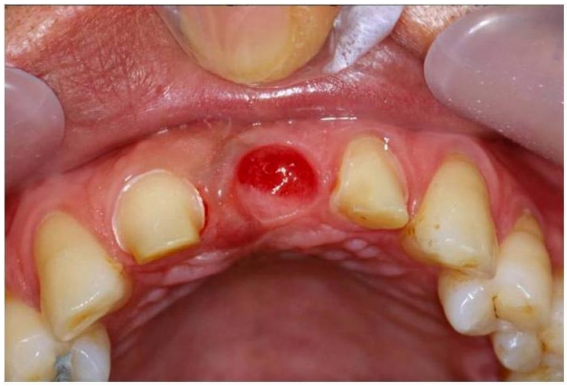
(Table/Fig 2)

(Table/Fig 3)

(Table/Fig 4)

(Table/Fig 5)

(Table/Fig 6)



(Table/Fig 7)

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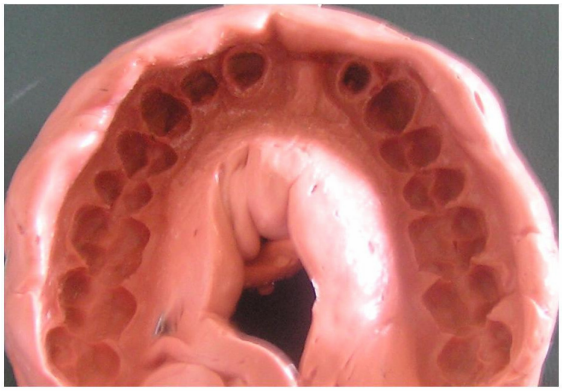

(Table/Fig 9)

(Table/Fig 10)

Conclusion

The main objective of aesthetics was achieved and the patient was very pleased with the outcome. The final restoration exhibited excellent form, function and aesthetics, as the restoration appeared to be growing out of the gingiva. All of this was possible because an adequate ridge contour was maintained with the ovate pontic.

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