Site preparation for the ovate pontic to restore the natural gingival contour- case series

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Abstract: ***The provision of fixed prosthodontic restorations that meets the patient's functional and aesthetic demands can be challenging, especially in the anterior maxilla. Providing an aesthetic anterior bridge may be challenging with respect to giving the pontic a natural appearence. Several factors need to be addressed successfully. These include the size, shape, shade and position of the pontic, as well the emergence profile from the soft tissues. In order to mimic the appearance of a natural tooth, the pontic should appear to emerge from the gingivae and support the buccal/labial soft tissue as well as the adjacent papillae. The proximity of the pontic to the mucosa requires that the design should be cleansable and compatible with plaque control and periodontal health. The emergence profile of the pontic is especially important if the bridge is planned in the anterior maxilla and the patient has a high smile line. In many cases, the commonly used pontic designs may not adequately address all the aesthetic challenges. So, the use of ovate pontic increases. This paper depicts the methods for site preparation and restoration of maxillary anterior regeion with ovate pontics. Our only aim is to restore anterior aesthetics to achieve favourable and real-life restorations.***

Index Terms **- Esthetic restoration, Fixed prosthesis, Ovate pontic**

I. INTRODUCTION

An attractive or pleasing smile clearly enhances the acceptance of the individual in the society, where he/she belongs and the character of the smile influences to the great extent the attractiveness and the personality of the individual. As clinicians, our ultimate goal is to achieve a pleasing composition in the smile-to create an arrangement of the various esthetic elements to proper proportion or relation according to known principles. The most challenging issue in anterior esthetic restoration is to preserve the interproximal soft tissue and the alveolar ridge to collapse after the extraction of a tooth .The shape and form of the pontic is not the only important criteria to be taken into account for the good outcome, the contour of the gingival tissue is also an important factor. Pontic should support the gingival tissue and eliminate the black triangle. Certain factors must be carefully considered when attempting to use the ovate pontic technique. The dimensions of the soft tissues, atraumatic oral surgery (when applicable), and ridge preservation or enhancement techniques are essential.[1] Use of functionally suitable and aesthetically acceptable provisional restorations, such as transitional fixed or removable partial dentures, is also important. The proximal contacts of the provisional prosthesis should be positioned immediately above the interproximal papillae of the adjacent natural teeth to promote retention of gingival form.[2] This will also help to limit loss of tissue. Loss of alveolar bone during tooth removal can also result in aesthetic failure, as support of the soft tissues is contingent upon the integrity of the underlying crestal bone.[2,3] This article describes the modified ovate pontic design for replacing upper anterior tooth to give both esthetics and health. This article presents three cases of anterior esthetic restoration by the help of ovate pontics in three different clinical situations.

II. CASE REPORTS:

Three case were done using the ovate pontic design and all of them had different case situations. These are described as follows.

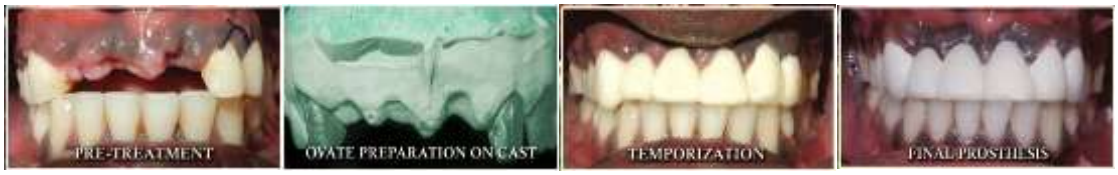
II.1 Case 1:

A 23 year old male patient reported to the department of prosthodontics and crown and bridge demanding replacement of missing anterior teeth. On examination, it was found that 12,21,22 were mobile due to trauma two days ago. A fixed partial denture was planned to rehabilitate the missing teeth. 11,13 and 23 were selected as abutments and were prepared accordingly after obtaining proper consent of the patient. 12,21,22 were extracted carefully to preserve the bony socket. Impression was made and a model was prepared. Provisionalizaton was done on the prepared model and temporarily luted to the abutments using zinc oxide eugenol. Sequential follow ups and relining of the provisional bridge was done. After 3 months, it was found out that soft tissue architecture was ready to receive the ovate pontic. Impression was made with addition silicon impression material of putty consistency which was refined by light body wash impression. Final prosthesis was cemented after satisfactory metal trial and bisque trial.

CASE I

II.2 Case 2:

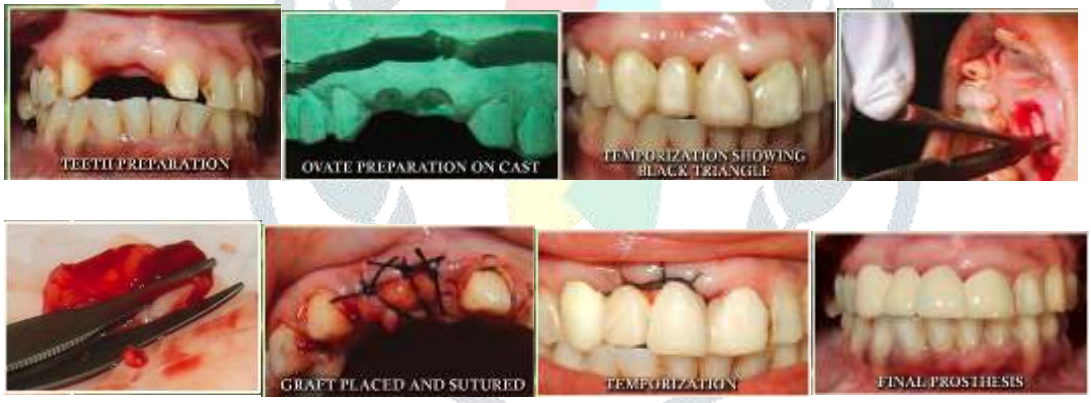
A 25 year old male patient reported to the department of prosthodontics and crown and bridge demanding replacement of missing anterior teeth. On examination, it was found that 11,12 ,21,22 were extracted two days ago and unhealed socket was detected. A fixed partial denture was planned to rehabilitate the missing teeth. 13 and 23 were selected as abutments and were prepared accordingly after obtaining proper consent of the patient. Impression was made and a model was prepared. Provisionalizaton using ovate pontic was done on the prepared model and temporarily luted to the abutments using zinc oxide eugenol. Sequential follow ups and relining of the provisional bridge was done. After 3 months, it was found out that soft tissue architecture was ready to receive the ovate pontic. Impression was made with addition silicon impression material of putty consistency which was refined by light body wash impression. Final prosthesis was cemented after satisfactory metal trial and bisque trial.



CASE II

II.3 Case 3:

A female patient of 55 years age presented a complain of missing teeth in upper front teeth regeion with a history of extraction 10 days back. On examination it was found that 11,12 were extracted and ridge resorption started. 13and 21 were selected abutments and prepared accordingly. The model was prepared and the receptor for ovate pontics were made as in case2. After insertion of the provisional FPD it was found that black triangles were present which did not replicate the natural contour. So, a sub-epithelial connective tissue graft was taken from the palate, placed on the deficient area and sutured. Temporization was done immediately. After 3 months of follow up, it was seen that the black triangles completely eliminated and the natural gingival contour was formed. Impression for the definitive prosthesis was made with addition silicon impression material of putty consistency which was refined by light body wash impression. Final prosthesis was cemented after satisfactory metal trial and bisque trials respectively.



CASE III

III. Discussion

A convex surface has been advocated for the pontics of posterior and anterior fixed partial dentures. A modified ridge lap pontic establishes gentle contact on the labial surface of the alveolar mucosa, with no contact on the palatal surface. This design facilitates good oral hygiene and cleaning of the pontic.[2,4] However, esthetics are compromised, since a complete emergence profile cannot be obtained because of the convex shape of the alveolar ridge.[3,6]

In addition, this design commonly creates palatal food traps and causes phonetic difficulties, as air and saliva are pushed through from the lingual surface. The ovate pontic design allows for an excellent esthetic outcome. To sculpt the tissue beneath the pontics, provisional restorations with ovate pontic designs should be provided for tissue guidance and stabilization.[5] The controlled pressure applied to the soft tissues of the residual ridge by the smooth convex pontic, along with good plaque control, results in a thinning of the epithelium and shortening of rete pegs, without causing tissue inflammation.[7] The sculpted tissue beneath the pontics must be accurately transferred to a cast to provide the dental laboratory technician with the necessary information to fabricate a definitive restoration with an appropriate emergence profile.

IV. Conclusion

In the three cases the first case is about immediate provisional after extraction. In second sase the temporization is done after 2 days of extraction. Whereas, in the third case, provisionalization is done after 10 days of extraction.

So, it can be concluded that ovate pontic can be used in cases where esthetics is the primary concern. The reason can be explained as the easy methods for preparation of the pontic receptor site whch can be done in almost all the clinical situations.

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