Treatment options for replacement of missing central incisor

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Introduction

Replacement of single anterior tooth can be achieved through different options viz dental implants, resin bonded bridges, conventional fixed partial dentures. Patient’s exacting demands, on many occasions defeat the possibility of ideal treatment. In some cases, adapted treatment plans have to be tried. A case is reported where maxillary central incisor was replaced with fixed dental prosthesis incorporating dual loop connectors.

Case report

A 19 year old male reported for the replacement of left maxillary central incisor. His prime concern was esthetic replacement as well as maintenance of midline diastema. On examination the available edentulous span was greater than the approximate size of the adjacent central incisor.

Abstract

Replacement of single anterior tooth is a complex, challenging procedure that can be accomplished with implant-supported restorations as well as conventional porcelain-fused-to-metal and resin-bonded fixed partial dentures. Different esthetic treatment options must be explored in treating such patients. Drifting of teeth into the edentulous area may reduce the available pontic space; whereas a diastema existing before an extraction may result in excessive mesio-distal dimension to the pontic space. Although rarely used, loop connectors are sometimes required to address this problem of excessive mesio-distal pontic space. Loop connectors offer a simple solution for a situation involving an anterior edentulous space albeit with the maintenance of the diastema. This article presents a case with excessive space in the anterior region treated with a loop connector to achieve ideal esthetic results in the maxillary anterior segment.

MeSH words: Anterior edentulous space, diastema, loop connector, spring cantilever fixed partial denture, abutment, anterior.

Procedure

After obtaining diagnostic radiographs, maxillary and mandibular alginate impression were made for a mock-up of the final restorations. Two diagnostic wax-ups were made. In the first mock-up no diastema was kept between the adjacent teeth. In the second mock-up a fixed partial denture was designed with a loop connector to make the replacement esthetic and in accordance with the overall appearance and alignment of his other teeth. Both the mock wax-up were shown to the patient. The patient approved the second wax-up that was designed with a loop connector. Patient’s maxillary right central incisor and left lateral incisors were prepared in the conventional manner (Fig. 1), impressions made and a loop connector was designed. Two retainers were given for better support and retention, the amount

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of the diastema seen in the anterior region and also to decrease the amount of stress on single abutment, if given. The two retainers were connected by a minor connector, which was extending on to the rugae area, in the valleys of the rugae. The dimension of the connector was 2mm with a relief provided by using 0.2mm relief wax. After making the wax pattern, casting was completed and a coping trial was tried in the mouth. After verifying the fit of the casting ceramic build up was completed and the bridge was cemented. (Fig. 2, Fig. 3)

Conclusion
Presence of excessive spacing in the midline makes esthetic replacement a great challenge to the dentist. Use of innovative techniques to achieve esthetic results in fixed partial denture treatment procedures makes loop connectors a suitable and a viable treatment option. Loop connectors have several advantages when it comes to the esthetic appearance, but the patient might object to projecting minor connector in the palatal region, and it might be a potential food trap for the patient. If the patient can get adapted to the palatally projecting connector, incorporation of loop connector is an excellent treatment option in cases where excessive space is present in the esthetic zone.

References