

**MANAGEMENT OF A MISSING ANTERIOR TOOTH WITH A SPRING CANTILEVER  
PROSTHESIS – A CASE REPORT**

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**ABSTRACT**

Advancements in implants have changed the treatment planning of any edentulous area. However, the increased cost and invasiveness of the implant procedure makes fixed partial dentures the preferred treatment of choice for many patients. Managing an increased mesio distal pontic space is definitely a challenge for a Prosthodontist. Although rarely used, a spring cantilever prosthesis can be a treatment option to manage this situation. This article describes the case report of a patient with an increased mesio-distal width in pontic space due to an existing midline diastema. Fabrication of a metal ceramic spring cantilever prosthesis for this patient is discussed.

**KEYWORDS:** Diastema, esthetic, fixed partial denture, spring cantilever.

**INTRODUCTION**

Restoration in the anterior edentulous region is always a challenge in the present-day scenario. Treatment planning of an anterior edentulous space is always a concern for a Prosthodontist. As Prosthodontists, we need to ensure that an aesthetic prosthesis is fabricated keeping all the principles in mind.

A major concern is the presence of an increased mesio-distal space owing to a pre-existing diastema. It is considered ideal to maintain the diastema if the patient wishes to retain the diastema.<sup>[1,2]</sup> In such cases, a spring cantilever prosthesis may be planned.

**CASE REPORT**

A 52-year-old male patient reported to the Dept. of Prosthodontics with a missing tooth in the upper right front tooth region. The patient further expressed that he had spacing between his upper front teeth and that he wanted to retain that spacing in his restoration. On intra-oral examination it was observed that the edentulous space was larger than the mesio-distal width of the contra-lateral central incisor.(Fig. 1)

All prosthodontic restorative options were explained in detail to the patient. The patient was unhappy with a removable partial denture as a treatment option, and an implant was not affordable for the patient. Hence a spring cantilever prosthesis was planned.

The canine was chosen as an abutment for the spring cantilever prosthesis. The presence of a minor wear

facet, the reduced distance from the pontic, and the long root of the canine made it an ideal choice.

**CLINICAL PROCEDURE**

After obtaining consent, the right canine was prepared to receive a full veneer crown.(Fig. 2) The final impression was made using a dual phase impression technique using a custom tray. A thin layer of light body was washed over the heavy body impression material (3M express XT penta H) to make the impression. Shade selection for the prosthesis was done under broad daylight. A temporary crown was fabricated to protect the vital canine. The impressions were poured using die stone and removable dies were prepared.

The wax patterns were fabricated using blue inlay wax. The connector was also fabricated using sprue wax and casting was obtained.<sup>[3]</sup>

During the metal try-in, the fit of the copings and the loop connector was evaluated.(Fig. 3) It was ensured that there was no pressure over the rugae area from the connector.

On the third appointment, the bisque trial was done and evaluated for fit and high points. The prosthesis was then finished and the ceramic was glazed. Special care was taken to ensure good finishing and polishing of the loop connector. The prosthesis was then cemented in place.(Fig. 4) Patient was instructed regarding the maintenance of the prosthesis.



**Figure 1: Pre-operative photograph.**



**Figure 2: Preparation of the canine for spring cantilever prosthesis.**



**Figure 3: Metal try-in of the prosthesis.**



**Figure 4: Final prosthesis – With retained diastema.**

**DISCUSSION**

When a patient presents with a missing anterior tooth with a pre-existing diastema, implant supported prosthesis is the most ideal treatment option.<sup>[4]</sup> Fixed partial denture is the next viable treatment option when a patient is not willing for an implant supported prosthesis. However, in this case, a conventional fixed partial denture was not feasible owing to the diastema present. Hence a spring cantilever prosthesis was planned.

Many a time, when a missing central is replaced with a spring cantilever prosthesis, the pre-molar or a molar requiring a restoration is chosen.<sup>[5]</sup> However, owing to the long cantilever, there may be issues with stability of the prosthesis, food accumulation and irritation of the underlying mucosa. Here in this case, the canine was chosen owing to the reduced distance between the pontic and abutment tooth thereby ensuring stability of the prosthesis.

To ensure efficient plaque control, the connector was polished well and was made with ideal thickness to avoid accumulation of food debris between the mucosa and the connector.<sup>[6]</sup> The connector was placed as anteriorly as possible to avoid interference with speech.<sup>[7]</sup>

It has to be noted that spring cantilever prosthesis can be the treatment option in patients with deep overbite or periodontal issues.<sup>[8]</sup>

**CONCLUSION**

In a country like India where a vast majority of the population belong to the lower socio-economic strata, implants may not be the treatment of choice. Hence while managing an increased mesio-distal pontic space, the use of a spring cantilever fixed partial denture may be the treatment of choice.

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