Clinical Pearl

Implant Placement Simplified…Adjustable Stent

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ABSTRACT

Recently, there is increase in number of adult patients seeking orthodontic treatment. Anchorage control is major issue in adult orthodontic patients. Introduction of mini implants in orthodontics for anchorage control has helped us to treat many complex malocclusions. However, the stability and placement depends on accurate position mini implant. This article highlights the fabrication of a stent which is simple in design, cost effective and provides an accurate placement of a mini-implant in sagittal and vertical planes.

Keywords: Orthodontic treatment, Anchorage, Mini-implants, Stent.

INTRODUCTION

In recent times, there is an increase in the number of adult patients seeking orthodontic treatment. Anchorage control plays a key role while treating these adult orthodontic patients. The introduction of mini-implants has made anchorage planning easy as they provide absolute anchorage. But the accurate placement of mini-implant is of paramount importance for its stability and precise control of the force vector. The retention or stability of the mini-implant intraorally depends on various factors. Root proximity is a major cause of mini-implant failure.[1] The safety of the surrounding structures like the roots, nerves, blood vessels and the maxillary sinus need to be considered. Placing a mini-implant with the use of a guide/stent increases its precise location and also reduces the risk of other associated problems.[2]

Hence to avoid the above risks and problems associated with implant placement a new stent is designed.

STEPS FOR STENT FABRICATION

1. Take a tip-edge bracket (or any other bracket with both horizontal and vertical slot), place 0.019 × 0.025" SS wire in horizontal slot and secure with ligature wire (Fig. 1).
2. Take 0.016 × 0.022" SS wire, make a loop of 3–4 mm diameter on one end and at the other end make millimeter calibration for the purpose of vertical adjustment of the loop height. Insert and secure this wire in the vertical slot of the bracket (Fig. 2).

The stent is then secured intraorally and its positioned confirmed using IOPA (Figs 3 and 4). Implant is placed intraorally using the stent as guide and the position of the implant is confirmed using IOPA (Figs 5 and 6).

Advantages

- Enables placement of the mini-implant correctly away from the roots of adjacent teeth by adjusting the bracket mesiodistally (horizontally).
- Enables placement of the mini-implant correctly in vertical direction with the help of calibrated marking on 16 × 22 SS wire.
- Versatility of use i.e. can be used anteriorly, posteriorly, maxillary arch and mandibular arch.

CONCLUSION

This stent is simple, can be fabricated chairside, needs no special instruments or material, easy to fabricate, easy to insert and remove, cost-effective and help in accurate placement of the mini-implant. Hence, it helps in increasing the insertion success rate of the mini-implants.

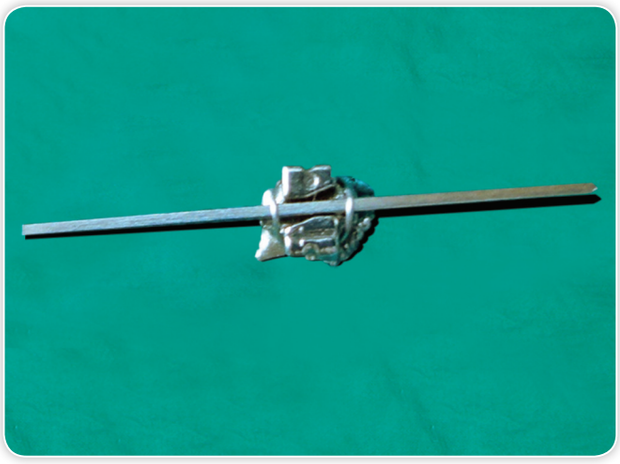

Figure 1 Bracket with 0.019 × 0.025″ SS wire

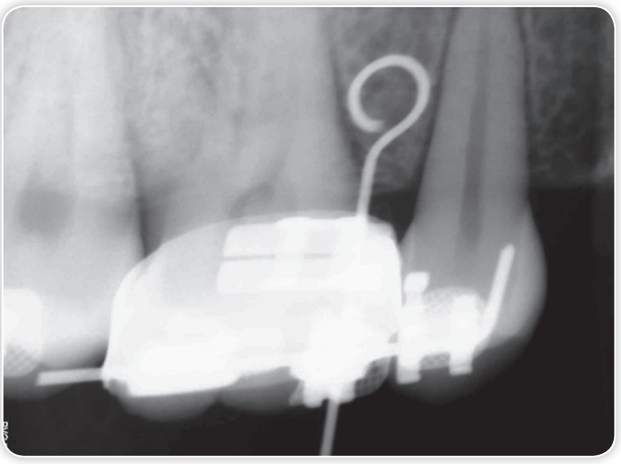

Figure 4 Radiograph to confirm the position of stent

Figure 2 0.016 × 0.022" SS wire with loop in vertical slot

Figure 5 The mini-implant insertion guided by the stent

Figure 3 The stent after placement in the patient mouth

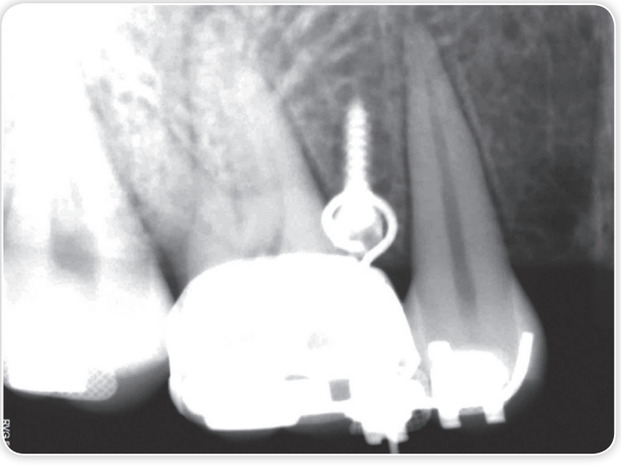

Figure 6 Radiograph showing the mini-implant location

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