

## UNILATERAL NI-TI ARCH WIRE SPACE REGAINER: A CASE REPORT

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### ABSTRACT

Early orthodontic therapies are frequently used to induce beneficial developmental changes in the developing dentition. Interceptive orthodontics has the potential to remove or lessen the severity of a developing malocclusion, the complexity of orthodontic therapy, overall treatment time, and cost. The loss of a deciduous tooth or teeth too soon can often compromise the integrity of proper occlusion. There are several space-recovery and space-maintenance devices mentioned in the literature. In this post, I will demonstrate a simple space recovery approach using a piece of nickel titanium (NiTi) wire attached between the teeth in active loop form, and the unique shape memory characteristic of NiTi wire will upright or move the teeth, allowing the lost space to be readily reclaimed.

**KEYWORDS:** Light cure composite, NiTi wire, space-regainer.

### INTRODUCTION

The dental profession is concerned with the efficient prevention and interception of developing occlusion. The right treatment of voids left by the premature loss of deciduous teeth is an essential aspect of preventative orthodontics. This problem is bound to become less common as more individuals become aware of the need of repairing deciduous teeth, but it is now a substantial one.<sup>[1]</sup> Unfortunately, some dentists have advised patients to avoid repairing deciduous teeth because they would be gone. Perhaps it is because youngsters are often more difficult to handle, or the outcomes are less productive to the dentist in terms of time and price. Premature loss of deciduous teeth, particularly deciduous molars, can induce mesial migration of the first permanent molar, disrupt arch stability, and impaction or ectopic eruption of the second premolar.<sup>[2,3]</sup> Traditional space regainers, such as Gerber's space regainer, a spring regainer, lip bumper, active lingual bar, extraoral appliances, and so on, have drawbacks such as.

- Require several visits to the dental clinic,
- Require band creation,
- Complicated laboratory procedures,
- Band may have a detrimental effect on gingival health,
- Possibility of secondary caries under the band and
- Require patient cooperation

### CASE REPORT

The NiTi space regainer/maintainer is a straightforward gadget that may be used chairside in a single visit. A composite dimple is bonded to the buccal side of a permanent first molar, and an explorer is used to dig a

tunnel into the dimple's mesial, resulting in a composite tunnel that is only open on the mesial end. After that, a piece of 0.016 inch NiTi wire is connected to the buccal side of the primary molar/first premolar and stretched beyond the dimple. The free end of the wire is guided into the tunnel produced (figure 3) in the dimple of the first molar after the composite has been set on both teeth with the use of arotor and straight fissure bur. This will result in a NiTi wire actuated loop. To make the attachment more durable, a little quantity of bonding material is applied in the tunnel aperture. Because of the remarkable shape memory feature of NiTi wire, (figure 4 and 5) the loop gradually reverted to its previous shape, distalizing and uprighting the first molar.



Figure 1.



Figure 2



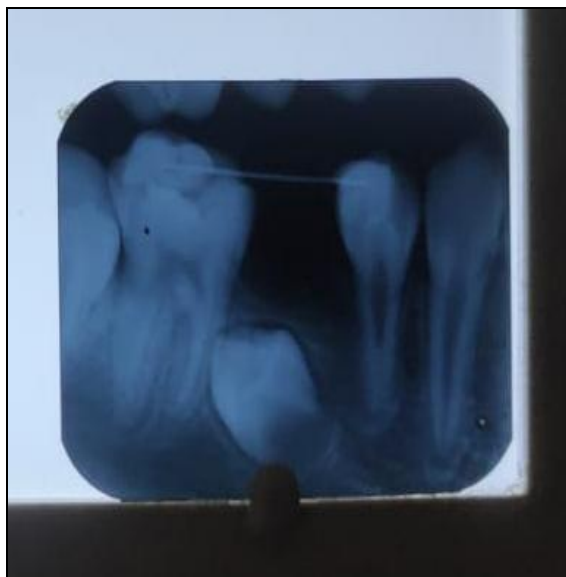
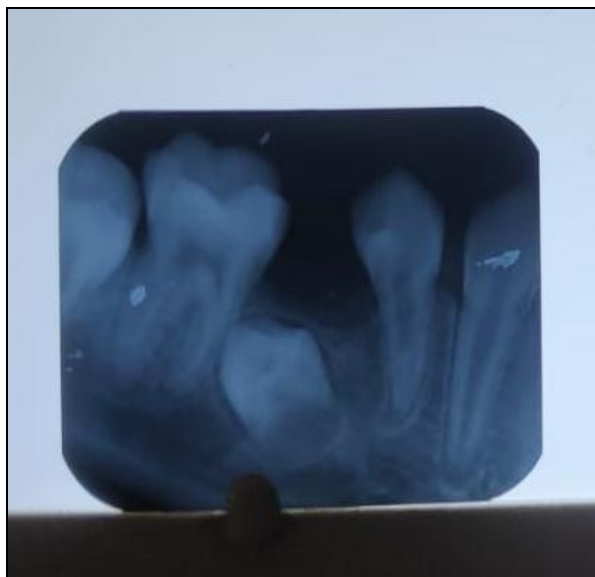
Figure 3



Figure 4



Figure 5



After 3 months of post treatment

When the active correction is finished, the wire section is retained in place as a passive space maintainer until the second premolar eruption.

Advantages of this method are.

- The entire operation can be accomplished in a single chairside visit.
- There is no need for processes such as impression taking, band fitting, and soldering;
- Better oral hygiene may be maintained since the appliance is self-cleaning; and
- Improved patient compliance.

**DISCUSSION**

Conventional space regainer has some difficulty to fabricate as these have complicated banding procedure, it is difficult to fabricate in slightly erupted tooth. These conventional appliances must require good patient compliance, these can be felt burden for the patient in their mouth. It has more chances to break and in some instance it is more costly than this NiTi arch wire space regainer. We can also say in this technique we can conserve material or reduce material wastage. As in this technique a short length of arch wire is used we can fabricate more number of appliance from one arch wire and/or we can fabricate the appliance from the extra cut out part from the excess arch wire used in conventional orthodontic treatment. So we can must say this technique an overall advantages over the conventional technique.

**CONCLUSION**

One very successful technique of recovering and preserving space is the bonded space regainer made of NiTi wire.

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