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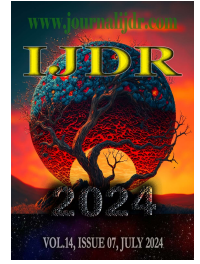
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RESEARCH ARTICLE

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CHAIRSIDE NANCE BUTTON- A NOVEL TECHNIQUE OF FABRICATION OF THE NANCE PALATAL BUTTON

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ABSTRACT

The nance palatal button employs traditional fabrication methods, involving lab work with metal bands, stainless-steel wire, and an acrylic button, were time-consuming and prone to fit issues due to band shifts during impression transfer. To improve efficiency and fit, a new chairside technique has been developed. This method uses a light cure composite material to create the button directly in the dental chair, eliminating the need for lab procedures and allowing precise intraoral positioning and curing.

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INTRODUCTION





The Nance palatal button, first described by Nance in 1947, serves as a common anchorage appliance for moderate anchorage and as a space maintainer. Essentially, it is a modified version of the transpalatal arch, integrating an acrylic button, particularly beneficial for patients with higher anchorage requirements.¹ Various versions of fabrication of Nance Palatal Button have been described in the past²⁻⁴. These methods required transferring metal bands with an impression, followed by soldering a looped stainless-steel wire onto the palatal surface of the bands in the lab. Subsequently, an acrylic button would be added to the anterior part of the wire, positioned against the hard palate. Finally, the appliance would be cemented onto the molars intra-orally. However, this traditional procedure proved to be time-consuming and occasionally led to poor appliance fit due to potential shifts in the position of bands during impression transfer. To address these challenges, a new chairside fabrication technique has been adopted. This method involves crafting the appliance directly in the dental chair without necessitating any lab procedures. The acrylic button is replaced with a light cure composite material (Anabond Blu - Bite) (Fig.1) which can be precisely positioned in the desired site and cured intraorally.

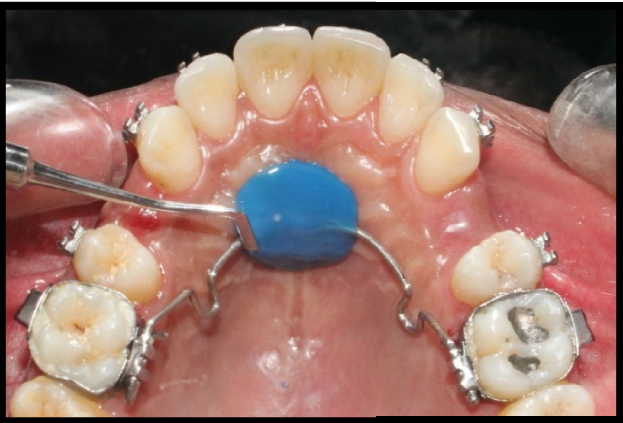
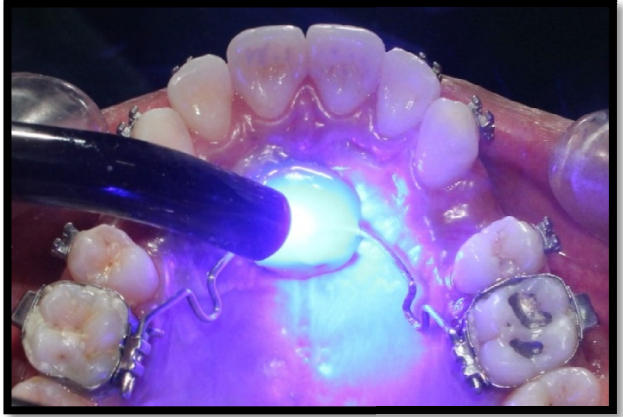
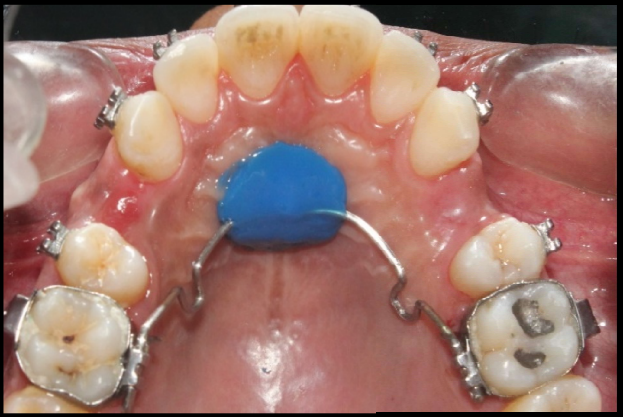


Figure 1. Light cure composite material (Anabond Blu- Bite)

METHOD

The steps of fabricating the appliance are described below:

No.	Description	Descriptive image
1.	<p>The U shaped wire framework with 3 U-loops is prepared with a 20 guage stainless steel wire. The distal ends of the framework consist of a double back bend.</p> <p>The anterior U- loop is made for retention of the blue bite and posterior loops are for adjusting the anteroposterior length of the appliance. (Fig. 2)</p>	 <p>Figure 1. Wire framework prepared on working model</p>
2.	<p>The wire framework is tried intraorally for its fit. The double back bends of the distal end is inserted in the lingual sheath welded on the molar bands. Adjustments are done for a passive fit of the framework into the lingual sheath. (Fig. 3)</p>	 <p>Figure 2. Wire framework trial intraorally</p>
3.	<p>The wire framework is checked for its adaptation on the palate with 0.5 mm clearance away from the tissue surface. (Fig. 4)</p>	 <p>Figure 3. Wire framework inserted into the lingual sheaths</p>
4.	<p>The junction of the vertical slope and horizontal area of the anterior palate is the site of the placement of the button. The area is air dried with the three-way syringe. (Fig. 5)</p>	 <p>Figure 5. Palatal surface air dried for placement of composite button</p>

5.	A coin size amount of Blu- bite is molded having a thickness of about 2mm. It is placed in the site over the anterior U loop of the wire framework (Fig. 6)	 <p>Figure 4. Blu- bite material placed on the anterior loop</p>
6.	The Blue Bite material is cured with a LED light curing unit for 20 seconds on each half of the button. (Fig. 7)	 <p>Figure 5. Composite material cured for 20 seconds</p>
7.	The final appliance is in place for use. It is used as an anchorage device in sagittal plane. (Fig.8)	 <p>Figure 6: Chairside Nance button in place</p>

DISCUSSION

A poorly fitting Nance palatal button can lead to harmful consequences such as difficulty in oral hygiene, tissue impingement, and periodontal damage⁵⁻⁷. The current fabrication technique involves minimal lab procedures, helps ensure a proper fit and reduces these risks.

CONCLUSION

The chairside fabrication of Nance palatal button using a light cure composite material has the following advantages:

1. Precise placement of the button intraorally.
2. Saves an additional lab appointment
3. Easy to fabricate.
4. Reduced food lodgment.
5. Ease of removal of appliance.

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