

FORCED ERUPTION OF MULTIPLE IMPACTED TEETH – A CASE REPORT

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Abstract

To fabricate a wire stent this can aid in the forced eruption of multiple impacted teeth. Wire stent was fabricated using a 20 gauge stainless steel wire, stoppers soldered with the help of silver solder to aid in force application. The wire assembly was acrylicized using self-cure acrylic resin. Bite blocks were incorporated in the acrylic plate. The impacted teeth emerged into the oral cavity with the help of the fabricated wire stent in three to six month time. The fabricated wire stent is a useful tool for the forced eruption of multiple impacted teeth. It is easy to fabricate and the eruptive force can be applied on the impacted teeth without using the intermaxillary anchorage.

Key Word: - Forced eruption, Impacted teeth, Wire splint

Introduction

Impaction refers to failure of a tooth to emerge into the dental arch. The etiology of impaction is multifactorial. Some of the causes are: genetic predisposition, developmental anomalies, syndromes, inadequate arch space. Thick fibrous gingival tissue has also been reported as one of the causative factor. Dental impaction has been reported to affect as much as 25% to 50% of the population.¹ Multiple impacted teeth can add significant complications to an otherwise straightforward case. When multiple impacted teeth are present, the case complexity increases further. Developing a treatment sequence, determining appropriate anchorage, and planning and executing sound biomechanics can be a challenge. Patients with multiple impactions need coordinated management to guide eruption of as many teeth as possible. Those that cannot be brought into the arch may require extraction followed by either space closure or prosthetic replacement. The following is a case of multiple impactions in a young adult patient.

Case Report

A male patient aged 20 years reported to our department with chief complaint of retained deciduous and multiple unerupted permanent upper and lower anterior teeth. There was no significant medical history or syndrome associated. The hormonal profile of the patient was also found to be normal. The probable etiology for the impacted teeth might be the retained deciduous and thick fibrous gingival tissue.

Treatment plan

- Forced eruption of the impacted teeth.
- Tunnel traction method was the technique of choice for bonding attachments to the impacted teeth and exerting elastic traction forces from the specially designed splint.

Design and fabrication of splint

It was planned to fabricate a splint with posterior bite block and a thick gauge wire (20 gauge stainless steel) framework with stops to engage the elastic threads/E-chain to exert the eruptive force on the impacted teeth. Surgical exposure and

bonding of the attachment (Begg's bracket) was done in usual manner, ligature wire was inserted & twisted through the bracket.

The flap was sutured with the ligature wire extension out through the incision site. After 1 week sutures were removed & splint with wire frame work was cemented to the posterior teeth, acrylic portion of the splint was extended till CEJ for better retention. Eruptive forces were applied using elastic threads/ E-chain. One end of the elastic thread was inserted/ligated to the ligature wire hook and the other end in the wire frame work.



Figure 1: - Pre-treatment intraoral photograph

Fabrication of Splint

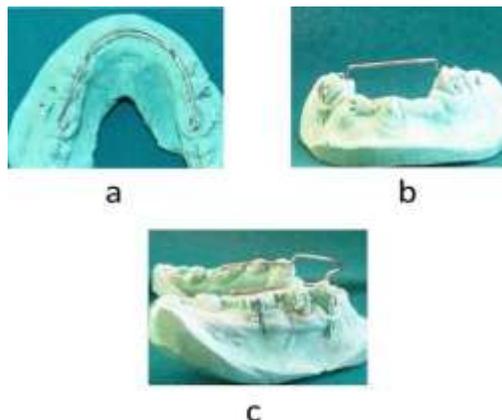


Figure 2: - Wire component are made up of 20 gauge stainless steel wire

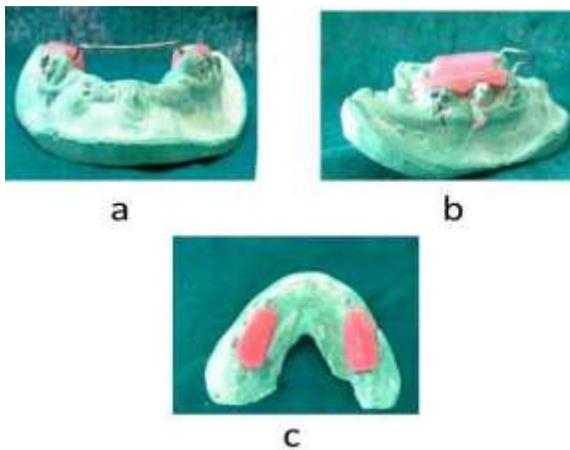


Figure 3: - Acrylization of the wire component with self-cure acrylic.



Figure 4: - Cementation of Splint



Figure 5: - Traction force applied through ligature wire



Figure 6: - Treatment progress (after 3 months)



Figure 7: - Treatment progress (after 6 months)

Results

We could achieve the desired objective by this innovative technique which can overcome the undesirable relative effects of inter-maxillary traction forces teeth emerged into the oral cavity in six months with the help of the wire splint which was made.

Discussion

Multiple supernumerary teeth without any associated systemic conditions or syndromes are not common and often associated with various syndromes. Review of the literature revealed only a few reported cases. The biggest challenge for the forced eruption in this case was the determination of the anchorage site for the application of the eruption forces. Intermaxillary traction was not possible because of lack of any surface to attach the elastics and the possibility of its relative side effects on opposing arch. To overcome the side effects of intermaxillary traction we fabricated a special splint for the mandibular arch. On application of the force with the help of the elastic chain and ligature wire hooks the teeth could erupt in the oral cavity.

Conclusion

It is highly recommended to perform early treatment of multiple impacted teeth during adolescence since a delay in the treatment of impacted teeth may induce the secondary problems such as root dilacerations and ankylosis. The present wire splint can be a useful tool which can be used for disimpaction of multiple impacted teeth especially in the cases where intermaxillary traction cannot be applied.

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