IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 16, Issue 9 Ver. III (Sep. 2017), PP 61-63
www.iosrjournals.org

Supraeruption Interception of Second Primary Molar - Case Report

[*]Keti Yovcheva[1], Nina Musurlieva[2], Galin Goev[3]
[1](*Department of Orthodontics, Faculty of Dental Medicine, Medical University – Plovdiv, Bulgaria)*
[2](*Department of Social Medicine and Public Health, Faculty of Public Health, Medical University Plovdiv, Bulgaria)*
[3] *(Dental Technician, Private Practice, Plovdiv, Bulgaria)*
Corresponding Author: [*]Keti Yovcheva

Abstract: *The aim of all early therapeutic methods used in early mixed dentition is to prevent the occurrence of orthodontic irregularities in the permanent dentition. In this case of early loss of lower second primary molar change in the vertical occlusal relationships was detected. To intercept further negative consequences for the permanent dentition a band-loop space maintainer was constructed and fixed.*
Keywords: *space maintainer, early loss of deciduous molar*

Date of Submission: 28 -08-2017 Date of acceptance: 09-09-2017

I. Introduction

The purpose of the interceptive orthodontic treatment is to eliminate or avoid adverse occlusal and dental consequences, which are effects of the early loss of primary molars. The premature loss of primary teeth due to caries, trauma, ectopic eruption, or other causes may lead to undesirable tooth movements of primary and/or permanent teeth including loss of arch length [1]. Arch length deficiency can produce or increase the severity of malocclusions with crowding, rotations, ectopic eruption, crossbite, excessive overjet, excessive overbite, and unfavorable molar relationships [2].

The literature pertaining to the use of space maintainers specific to the loss of a primary tooth type include expert opinion, case reports, and details of appliance design [1]. Treatment modalities may include, but are not limited to:

1. fixed appliances (e.g., band and loop, crown and loop, passive lingual arch, distal shoe, Nance appliance, transpalatal arch);
2. removable appliances (e.g., partial dentures, Hawley appliance). [3,4]

They can be constructed of different materials such as stainless-steel wire, or glass fiber-reinforced composite resin (GFRCR). They can be placed on the mandibular or maxillary arch.

II. Case Report

A 6-years old girl in early mixed dentition stage came in the Department of Orthodontics. Tooth 85 was extracted due complicated caries. Clinical and paraclinical investigations were undertaken. Paraclinical investigations include impressions from upper and lower jaw and OPG (Fig. 1, 2, 3).

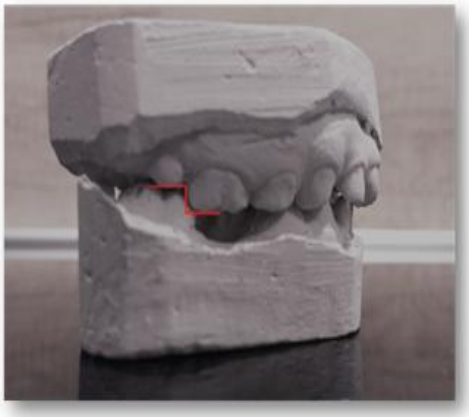

Figure 1. Right side of occlusion

Figure 2. Left side of occlusion

Figure 3. OPG of the patient

The biometrical model analysis detects Class I occlusion and supraposition of tooth 55 (Fig. 1), which may block the sagittal and lateral movements and is a perquisite for growth impairment of the mandibular arch and the eruption of a permanent tooth to replace the lost temporary tooth will occur in more than ½ - 1 year. The dental stage is still at crown level of development (Fig. 3). This is a requirement for space maintaining of the permanent tooth successor. The child refused to wear removable lingual plate, so we construct band-loop space maintainer (Fig. 4, 5, 6).

Figure 4. Right view with space-maintainer

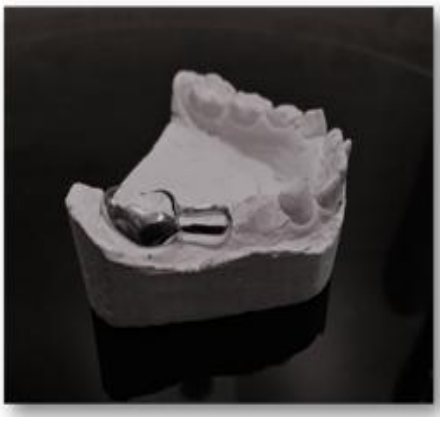

Figure 5. Space-maintainer fabricated in dental lab

Figure 6. Occlusal view of the space-maintainer

Fixed, solid spacers consist of metal rings fitted and cement-bonded to the distal tooth of the gap with the metal construction leaning against the mesial tooth. The space maintainer was fixed on tooth 46 with glass-ionomer cement (Fig. 7). Their disadvantage is that plaque is accumulated on their surface and under them, which poses a risk of caries formation on the teeth adjacent to the gap. So, proper instructions for oral hygiene were given. The loop retains the vertical and sagittal occlusal relationships.

Figure 7. Space-maintainer fixed with glass-ionomer cement

III. Discussion

Routine use of space maintainers has been recommended following any early loss of primary molars more than 6 months before the expected eruption of the permanent successors [5]. The space may be maintained with fixed as well as removable appliances. The advantage of fixed designs is that they are less dependent on patient cooperation compared to removable ones [5]. Disadvantages of the band and loop space maintainer include the risk of decalcification and overeruption of teeth opposite the loop [6]. As this appliance is fixed it does not depend on patient compliance for insertion. According to the scientific literature, a band and loop space maintainer design showed a significantly higher median survival time, and should be favored as a space maintainer design whenever possible [7]. Attempts at prevention and early orthodontic intervention are generally successful in minimizing the detrimental dental and occlusal effects of early loss of primary molars [8].

IV. Conclusion

The preservation of the occlusal morpho-functional complex using space maintainers mainly when the premature loss of the second primary molars occurs is an excellent interceptive treatment option.

References

[1]. American Academy of Pediatric Dentistry. Guideline on management of the developing dentition and occlusion in paediatric dentistry. Clinical Guidelines. 2014;36(6):251–261.
[2]. Brothwell DJ. Guidelines on the use of space maintainers following premature loss of primary teeth. J Can Dent Assoc 1997;63(10):753-66.
[3]. Ngan P, Alkire RG, Fields HW Jr. Management of space problems in the primary and mixed dentitions. J Am Dent Assoc 1999;130(9):1330-9.
[4]. Terlaje RD, Donly KJ. Treatment planning for space maintenance in the primary and mixed dentition. J Dent Child 2001;68(2):109-14.
[5]. Proffit, W. R., Fields, H. W., & Sarver, D. M. (2007). Contemporary orthodontics. St. Louis, Mo: Mosby Elsevier.
[6]. Gill, Daljit S. Orthodontics at a Glance. Oxford: Blackwell Munksgaard, 2008. Print. p. 62-63
[7]. Qudeimat MA, Fayle SA. The longevity of space maintainers: a retrospective study. Pediatr Dent.1998;20:267-272
[8]. Kerosuo H. The role of prevention and simple interceptive measures in reducing the need for orthodontic treatment. Med Principles Pract. 2002; 11(suppl 1): 16-21.

*Keti Yovcheva. "Supraeruption Interception of Second Primary Molar - Case Report." IOSR Journal of Dental and Medical Sciences (IOSR-JDMS) 16.9 (2017): 61-63