

Smile Scheming - An Interdisciplinary Approach for Reawakening Aesthetics

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Abstract: Hypodontia is the congenital absence of <6 teeth because of agenesis. This may be unilateral or bilateral. Multiple treatment choices are advisable to treat hypodontia, including the maintenance of primary teeth or equal space redistribution for restorative treatment with partial adhesive bridges, tooth transplantation, and implants. However, an interdisciplinary approach is the ideal treatment of hypodontia. This case report narrates the multidisciplinary approach to treat a bilaterally congenitally missed maxillary canine and bilateral peg shaped maxillary lateral incisor, how to enhance patient's smile using orthodontic fixed appliance, and porcelain laminates and bridge to attain the treatment outcome of function and aesthetic.

Keywords: Hypodontia, Interdisciplinary, aesthetics

1. Introduction

Congenital absence of one or more teeth from the dentition has been termed hypodontia. Congenital absence of the canines in the permanent dentition is very rare and the reported incidence varies from 0.18 - 0.45% [1, 2]. Studies have reported more predilections in females and in the maxilla [1]. Dental anomalies associated with congenitally missing permanent canines include agenesis of other teeth, microdontia, malocclusion, and retained primary teeth [1]. Missing incisors can have a major impact on dental and facial aesthetics and often may affect the self-esteem and social well being of the individual [3].

2. Case Report

A 22 year old male patient reported to the Department of Orthodontics, Modern Dental College and Research Centre, Indore, with a chief complaint of unpleasant smile due to missing teeth and spacing in upper arch. On clinical examination it was found that the lateral incisor of the patient was peg shaped bilaterally and canines was missing congenitally. Considerable amount of spacing were seen in the upper arch and mild crowding in the lower arch. The smile of the patient was analysed and a Diastema was found in between the upper central incisors. Extra oral photograph of the patient in frontal view at rest and smiling were taken before bonding (fig.1), after initial levelling and aligning (fig.2) and after prosthesis (fig.3).



Figure 1: Pre treatment extra oral photograph

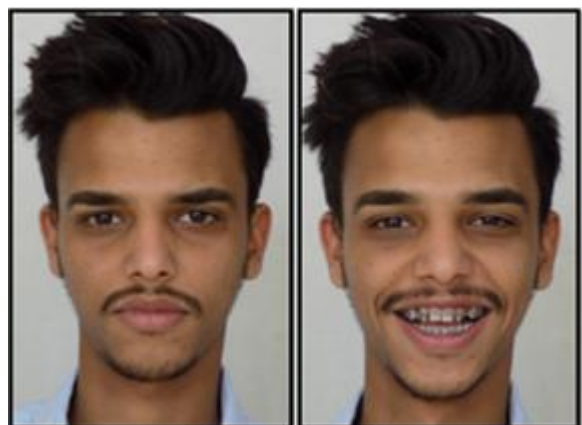


Figure 2: After levelling and aligning extra oral photograph

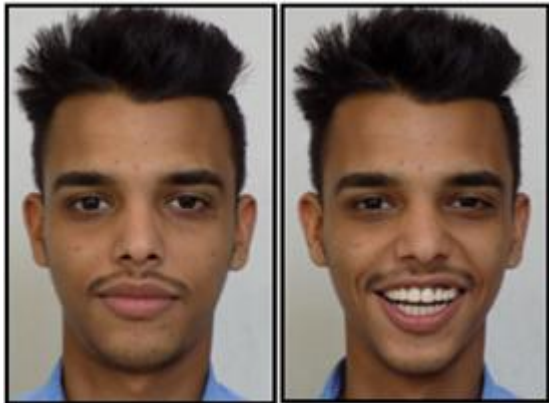


Figure 3: After prosthesis extra oral photograph

Intra oral photographs including frontal, side photographs of right and left side and occlusal photographs of maxilla and mandible was taken before treatment (fig.4) after initial level and aligning (fig.5) and after prosthesis (fig.6).



Figure 4: Pre treatment intra oral photograph



Figure 5: After levelling and aligning intraoral photograph



Figure 6: After prosthesis intraoral photograph



Figure 7: Smiling Photograph

After Photographs, alginate impressions were taken in the examination appointment to fabricate study models. Then with the combined effort of the team of aesthetic dentist and orthodontist treatment planning of the case was done which include levelling and aligning the teeth with equal space distribution for fixed partial denture (FPD) on lateral incisor, missing canine and premolars and laminates on central incisor giving balanced aesthetics and function. The recommended treatment plan was accepted by the patient and the treatment was started.

Treatment was started with Fixed orthodontic appliance with pre-adjusted edgewise technique (MBT 0.022"x0.028" System). After bonding the maxillary and mandibular arch the initial levelling and alignment was done with round 0.016" NiTi. The treatment with fixed appliances lasted 10 months, and the expected therapeutic effects were achieved. After alignment and levelling of the maxillary and mandibular arch till 0.019X0.025 inch rectangular stainless steel wire and equal space redistribution (fig.5) patient referred to aesthetic dentist for crown preparation and impressions. Afterwards FPD and Laminates were prepared and were fitted and the finished crowns were seated. (fig.6). Smiling photographs of the patient were taken (fig.7) and retainers were given.

3. Discussion

Congenitally missing maxillary permanent canines is rare. There are various treatment options available for replacing the congenitally missing maxillary canine. These are removable partial dentures, fixed partial denture, orthodontic repositioning of premolars to close the edentulous spaces, and implant [4, 5, 6]. Maxillary lateral incisors are often missing, abnormally shaped, or small. Specific shapes that have been identified are peg and barrel [7]. In this case patient is treated with interdisciplinary approach between orthodontist and aesthetic dentist to achieve harmonious results in the form of ideal symmetry and proportion. Early diagnosis and proper management of misshaped and missing teeth are important to avoid aesthetic, physiologic, and functional problems [8].

4. Conclusion

Orthodontics in combination with Interdisciplinary treatment, and aesthetic dentistry was useful to treat some nonsyndromic microdontia and congenitally missing teeth and provides acceptable good results.

References

- [1] Abu-Hussein M, Watted N, Azzaldeen A, Yehia M, Awadi O, Abu-Hussein Y. Prevalence of Missing Lateral Incisor Agenesis in an Orthodontic Arabs Population in Israel (Arab48). *International Journal of Public Health Research*. 2015;3(3):101-7.
- [2] Cho SY, Lee CK, Chan JC. Congenitally missing maxillary permanent canines: report of 32 cases from an ethnic Chinese population. *International Journal of Paediatric Dentistry*. 2004 Nov;14(6):446-50.
- [3] Azzaldeen A, Mai A, Muhamad AH. Ortho-Prosthodontic Management of Hypodontia Using Fibre-Reinforced Composite Resin Bridge: An Interdisciplinary Approach. *management*;1:2.
- [4] Muhamad AH, Watted N, Proff P, Borbély P, Watted A. Implant for Congenitally Missing Maxillary Permanent Cuspid. *Int J Dentistry Oral Sci*. 2017 May 26;4(5):471-5.
- [5] Shilbayih HA, Watted N, Abu-Hussein M. Multidisciplinary Aesthetic Dental Treatment; Peg lateral with Congenitally Maxillary lateral Incisors.
- [6] Muhamad AH, Nezar W, Azzaldeen A. Managing congenitally missing lateral incisors with single tooth implants. *Dent Oral Craniofac Res*2016. 2016;2(4):318-24.
- [7] Abdulgani A, Kontoes N, Chlorokostas G, Abu-Hussein M. Interdisciplinary Management Of Maxillary Lateral Incisors Agenesis With Mini Implant Prosthesis: A Case Report. *IOSR-JDMS*. 2015;14(12):36-42.
- [8] Tunç EŞ, Bayrak Ş, Koyutürk AE. Dental development in children with mild-to-moderate hypodontia. *American Journal of Orthodontics and Dentofacial Orthopedics*. 2011 Mar 1;139(3):334-8.