

ORTHODONTIC MANAGEMENT OF CONGENITALLY MISSING LATERAL
INCISORS – A RARE CASE REPORT FROM INDIANavneet Kaur Bhatia^{1*} and Navleen Kaur Bhatia²¹Department of Dental Surgery, ABVIMS & Dr. R.M.L. Hospital, New Delhi-110001, India.²Department of Dentistry, AIIMS, Jodhpur, Rajasthan, India.***Corresponding Author: Dr. Navneet Kaur Bhatia**

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ABSTRACT

This case report describes the orthodontic treatment of a woman, aged 20 years, who came to the Department of Orthodontics & Dentofacial Orthopaedics, Santosh Dental college, Ghaziabad with the chief complaint of congenitally missing permanent maxillary lateral incisors. Profile of patient was convex with end on canine and Class I molar relation. Midline diastema of 4mm was present with generalized spacing in lower anteriors. MBT fixed appliance was used along with preservation of space mesial to canines for dental implant placement. The missing lateral incisors were substituted with oral implants.

KEYWORDS: Orthodontics, Agenesis, Dental implants, Aesthetics.**INTRODUCTION**

Congenitally missing teeth is the one of the most important problem encountered in orthodontics. Studies reported, congenital absence of the permanent lateral incisor with a frequency of 2.2% and absence of the second premolar with a frequency of 3.4%.^[1] Incidence of Congenitally absent of one or both of the maxillary incisors in humans has been observed since the Palaeolithic period. As the species has evolved, the face and jaws tend to decrease in the anteroposterior direction, thus limiting the space causing the last tooth of each series tends to disappear (third molars, second premolars and lateral incisors). This is the hereditary cause of missing lateral incisors. Apart from genetics which is prime etiological factor, congenital disorders (including ectodermal dysplasia), nutritional disorders and radiation are other causes of agenesis.^[2,3]

The diagnosis of such case consists of clinical examination, radiographic examination (IOPA, OPG) more recently, cone beam computed tomography (CT) scan. Management of congenitally missing lateral incisors, is multidisciplinary involving orthodontics, aesthetic and restorative Dentistry and prosthodontics. Two treatment options are available in this case

1. Prosthesis – preserving the space and closure of midline diastema followed by placement of implants in between the upper centrals and upper laterals.
2. Closure of spacing by mesialising the canines, premolars and molars (camouflaging) and ending up of the case in class II.

Since closing of maxillary lateral incisor spaces has following disadvantages, preservation of space was chosen in this case.

Disadvantages^[4]

1. Pointed maxillary canines require post-orthodontic grinding or cosmetic bonding to simulate an incisor.
2. Maxillary canines are usually darker than lateral incisors; veneering may be necessary.
3. Maxillary canines are wider than adjacent absent lateral incisors, creating an aesthetic mismatch and an anterior tooth-size discrepancy. The six upper anterior teeth (first premolar, canine and central incisor) are relatively too wide for the corresponding lower six anterior teeth (canine, lateral and central incisor). This discrepancy can cause an increased overjet unless interproximal reduction is contemplated.
4. In canine substitution cases, the first premolar serves as a canine; the lingual cusp often needs to be reduced for aesthetic or functional reasons.
5. Because the labiolingual thickness of the upper canine is greater than the corresponding missing lateral incisor, selective palatal reduction of the canine is often needed.
6. The final occlusion demonstrates group function rather than canine guidance

CASE PRESENTATION

A 20-year-old female patient with a chief complaint of spacing between the upper anterior teeth came to the department of Orthodontics and Dentofacial

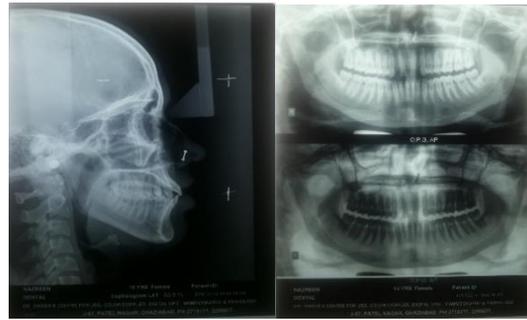


Figure 1i

Figure 1j



Figure 2



Figure 3a

Figure 3b

Figure 3c



Figure 3d

Figure 3e

Figure 3f



Figure 3g

Figure 3h

Figure 3i



Figure 3j

Figure 3k

DISCUSSION

Case was successfully completed by preservation of space and prosthetic rehabilitation. However, Robertsson and Mohlin^[5] pointed three advantages of space closure orthodontic treatment. They found that (1) the space-closure patients were more satisfied with the treatment results than the patients that had space opening for

prosthetics rehabilitation, (2) there was no difference between the 2 groups in prevalence of signs and symptoms of temporomandibular joint dysfunction, and (3) patients with prosthetic replacements had impaired periodontal health with accumulation of plaque and gingivitis. So, they concluded that orthodontic space closure produces results that are well accepted by patients, does not impair temporomandibular joint

function, and encourages periodontal health in comparison with the prosthetic replacements.

However, in cases of closure of spaces the following should be considered: (1) careful correction of the crown torque of mesially relocated canines to mirror the optimal lateral incisor crown torque, along with providing optimal torque and rotation for the mesially moved premolars, (2) the relationship between space closure x treatment time, which generally can be increased, (3) the difficulty in mechanical posterior tooth rotation during the subsequent mesial movement, uncontrolled root of the first pre-molars that have two roots, and differential bracket bonding, where the canines receive the lateral incisor brackets.^[1]

CONCLUSION

Treatment options to close spaces orthodontically or maintain these spaces for future prosthodontics rehabilitation should be discussed with the patient and/or parents. The orthodontist should explain all of the advantages and disadvantages of each treatment option. e.g., extractions need, the occlusal relationship of the posterior teeth, the position, shape and of canines etc. Rehabilitation of missing teeth require is multidisciplinary and require involvement of branches like orthodontics, prosthodontics, conservative dentistry in conjugation.

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