IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 7 Ser.4 (July. 2021), PP 64-67
www.iosrjournals.org

Management of Lateral Incisor Agenesis by Dental Substitution. Report of A Case.

Ruiz Flores Brenda Lizeth[1], Tapia Lima Federico José Luis[2], Montiel Raúl[3], Cerrillo Lara Daniel[4], Casanova Mercado María Guadalupe[5], Ayllón Monteón Grelda Berenice[6]

Autonomous University of Baja California, Tijuana, México

Resumen
La agenesia es una patología congénita que se caracteriza por la ausencia parcial o total del germen dentario de uno o varios órganos. El presente caso clínico muestra a paciente con ausencia congénita de incisivos laterales mandibulares tratada con cierre de espacios y sustitución canina, y extracciones de premolares maxilares.
Palabras clave: *agenesia, laterales, sustitución.*
Abstract
Agenesis is a congenital pathology characterized by the partial or total absence of the dental germ of one or more organs. The present clinical case shows a patient with congenital absence of mandibular lateral incisors, treated with space closure and canine replacement, and extractions of maxillary premolars.
Keywords: *agenesis, laterals, substitution.*

Date of Submission: 24-06-2021 Date of Acceptance: 07-07-2021

I. Introduction

Agenesis is a congenital pathology characterized by the partial or total absence of the dental germ of one or more organs.(1) The etiological factor is multifactorial, whether due to artificial, genetic or pathological causes. (2)

Dental agenesis affects preferentially the permanent dentition and in the female sex, and the most affected area is the anterosuperior region. (3) The range of agenesis of permanent teeth, excluding third molars, varies from 1.6 to 9.6%, depending on the population studied. The maxillary lateral incisor is twice as likely to be absent as the mandibular lateral incisor, however there is a strong association between absence of the primary tooth and absence of the permanent successor(4).

The absence of one or more dental organs constitutes a problem both in esthetics and function, because if it is not treated it can trigger malocclusion, masticatory and periodontal problems. From the esthetic point of view it can develop self-esteem problems. The therapeutic options to solve this problem are divided into 2 groups: space closure, with the substitution of the lateral for the canine for its later characterization and; to conserve and/or open spaces to receive any type of rehabilitation. (5)(6)

This paper reports a clinical case of congenital absence of maxillary lateral incisors treated with space closure, canine substitution and characterization.

II. Description of the case.

Female patient 8 years old attends the Orthodontic specialty clinic of the Autonomous University of Baja California campus Tijuana, without systemic or allergic references that compromise the treatment to be performed. She presents apparent facial symmetry, lip incompetence, straight profile, non frank and low smile. (Figure 1)

Figure 1. Extraoral photographs.

The radiographic examination shows mixed dentition, 16 dental organs present in the oral cavity, congenital absence of manipulated lateral incisors, maxillary canines in eruption process and no space for it, presence of chrome steel crowns in dental organs 5.5, 7.5, 8.5, symmetrical mandibular branch heights, (Figure 2).

Figure 2. Orthopantomography.

Intraorally we observed mixed dentition, non-coincident midlines, bilateral Class I molar relationship and indeterminate canines due to their absence; as well as the absence of the lower lateral incisors.

Horizontal overbite of 2 mm and vertical overbite of 3 mm. (Figure 3).

A Class I skeletal pattern is present, with normal incisors and a tendency to vertical growth. (Figure 4).

Figure 3. Intraoral photographs.

	NORMA	
SNA	82°	81°
SNB	80°	79°
ANB	2°	3°
Áng 1s / SN	103°	102°
1i / Go-Gn	90°	92°
Long. Mandibular	50 mm	53mm
Long. BCA	50 mm	55mm
Ang Go-Gn / SN	32°	35°
Witts	0mm	1mm

Figure 4. Lateral skull radiography and cephalometric compendium.

For the patient's improvement, the decision was made to opt for tooth replacement treatment to treat the congenital absence already mentioned, taking into consideration the space present, the patient's age as well as the radiographic findings.

In order to achieve a free eruption pathway of the upper canines, the extraction of bilateral upper first premolars is indicated with previous placement of a transpalatal arch that will be used as an anchor to conserve the space of the aforementioned extractions.

Subsequently, once the correct eruption of the dental organs 1.3 and 2.3 has been achieved, Alexander slot 0.018" fixed appliances are placed and NiTi 0.012" is started in both the upper and lower arches, continuing with the sequence of arches. (Figure 6).

Figura 5. Ortopantomografía de avance.

Figure 6. Intraoral advance photographs.

The distribution of spaces was continued, obtaining Class I molar relationships and coincident midlines, as well as the characterization of canines and lower first premolars with interproximal wear and resin augmentation. The correct lateral and protrusive movements were confirmed and it was decided to remove the appliance and place a removable Hawley type circumferential retainer. (Figure 7).

Figure 7. Final intraoral photographs.

Figure 8. Comparison before/after intraoral forehead photography.

III. Discussion

The main factors to consider in making a decision regarding the treatment plan in dental agenesis are the presence of malocclusion, the profile, shape and color of the canine, the labial position and gingival smile, the prosthetic space and esthetics of the soft tissues, and finally age and bone growth. [(7)]

Several authors list the indications as well as the advantages and disadvantages of space closure.

Indications: young patient, presence of mandibular crowding, compatible shape, color and size of canine and premolar.

Advantages: lower biological and economic cost, treatment can be completed during adolescence.

Disadvantages: tendency to reopen spaces. [(8)]

With regard to the case presented and its management with mandibular space closure and maxillary extractions, correct occlusal engagement was achieved, as well as esthetic and functional improvements. In early stages, a timely diagnosis is key in order to

References.

[1]. Correa, B & Gracia M. : Agenesia dentaria. Estudio Familiar. Rev. Cubana Ortod. 11: 1
[2]. Suarez G., M. J., Castillo G., F. Cercos S., E. & Rios De Las Heras, F.: Tratamiento con sobredentaduras. A propósito de un caso de oligodncia. Revista Científica y de información profesional.
[3]. Lozada, O. Alteraciones en el número de dientes asociados a maloclusiones. Tesis de Postgrado de Ortodoncia, Facultad de Odontología. Caracas, Universidad Central de Venezuela, 2003.
[4]. Nunn, J. H.; Carter, N. E.; Gillgrass, T. J.; Hobson, R. S.; Jepson, N. J.; Meechan, J. G. & Nohl, F. S. The interdisciplinary management of hypodontia: background and role of paediatric dentistry. Br. Dent. J., 194(5):245-51, 2003
[5]. Vogel RE, Wheeler SL, Casellini RC. Restoration of congenitally missing lateral incisors: a case report. Implant Dent. 1999;8(4):390-5.
[6]. Tuverson DL. Orthodontic treatment using canines in place of missing maxillary lateral incisors. Am J Orthod 1970;58: 109-27.

[7]. Kokich VO Jr, Kinzer GA. Managing congenitally missing lateral incisors. Part I: Canine substitution. J Esthet Restor Dent. 2005;17(1):5-10.
[8]. M.M. D'Emidio ; I. Lebreux Toboso ; J. Fernández Sánchez Agenesia de incisivos laterales ¿Cerrar o abrir espacio? RCOE: Revista del Ilustre Consejo General de Colegios de Odontólogos y Estomatólogos de España, ISSN 1138-123X, Vol. 22, Nº. 4 (Noviembre), 2017, págs. 197-208

Ruiz Flores Brenda Lizeth, et. al "Management of Lateral Incisor Agenesis by Dental Substitution. Report of A Case." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(07), 2021, pp. 64-67.