



HISTORICAL CONTEXT AND MAJOR PREDICTORS OF MALOCCLUSIONS AND THE EFFECT OF SPACE MAINTENERS

¹Antônio Franquim Neto, ¹Tiago Morais Perazzi, ¹Paulo Henrique dos Santos, ^{2,*}Idiberto José Zotarelli Filho, ^{1,2}Leandro Moreira Tempest and ^{1,2}Carlos Alberto Costa Neves Buchala

¹University Center North Paulista (Unorp) - São José do Rio Preto – SP, Brazil

²Post Graduate and Continuing Education (Unipos), Street Ipiranga, 3460, São José do Rio Preto SP, Brazil 15020-040

ARTICLE INFO

Article History:

Received 10th August 2017

Received in revised form

24th September, 2017

Accepted 18th October, 2017

Published online 30th November, 2017

Key Words:

Malocclusion,
Space maintainer,
Orthodontics,
Social trends of beauty.

*Corresponding author

Copyright ©2017, Antônio Franquim Neto et al. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Antônio Franquim Neto, Tiago Morais Perazzi, Paulo Henrique dos Santos, Idiberto José Zotarelli Filho, Leandro Moreira Tempest and Carlos Alberto Costa Neves Buchala. 2017. "Historical context and major predictors of malocclusions and the effect of space maintainers", *International Journal of Development Research*, 7, (11), 17045-17047.

ABSTRACT

The elaboration of this research engenders studies of dentistry and its performance in the treatment of malocclusions or malocclusions, classified among the main public health problems. In a socio-historical way, we discuss the precursors of this study to the present day by the treatments offered with the use of the maintainers of removable or fixed spaces, in addition to their advantages and disadvantages. The objective of focuses on the eminence of the psychological, social and physical impacts caused by malocclusion to the individual. It is concluded that the treatments through orthodontic diagnoses with the specialties of professionals working in this field, stand out in the ratio of results satisfactory to both the patient and the clinician to rely on the resources offered by the space maintainers. This research was carried out with the comprehensiveness of the bibliographic resources, making necessary a research, with the survey among readings, writers, researchers and scholars, in order to choose a theoretical reference for the foundation of the thematic.

INTRODUCTION

In the course of the development of the homo sapiens species, creation has always been the way of human beings to create and recreate, invent and reinvent themselves, thus giving meaning and direction to their existence and new discoveries. But human creation was not always accomplished in the same way, in order to meet the same needs. Even because to produce or create anything we have to consider where we are, the period in which we are, the instruments and knowledge that we have and the needs that we have. It adds up to all this, the passage from the individual to the collective (Dario, 2013 and Mozeli Keila Vieira Mozeli, 2015). In this sense, studies aimed at dentistry allow us to understand that the human race through creation, invention and innovation were linked to the flow of ideas of their precursors before the therapeutic proposals, methodologies and concepts for the strengthening and advancement of their ideals (Mozeli Keila Vieira Mozeli, 2015).

From the past to the present day, the studies carried out by orthodontics have intensified in an interceptive way, aiming aesthetically at a healthy and harmonious dentition, in a satisfactory way for the clinician and for the patient (Mozeli Keila Vieira Mozeli, 2013). Among the reasons that lead the patient to seek an orthodontic treatment, whether this interceptive, corrective or preventive, are intertwined the dysfunctions adjacent to the health of the teeth, considering the performance of facial aesthetics the main motive (Silveira, 2016). Thus, the role played by dentistry with the professionals that work in it constitutes the mediative activities of great importance for the prevention and treatment of malocclusion as well as in the occurrence of deciduous dentition loss due to early motility or diverse causality (Rerin, 2013 and Silveira, 2016). The present work had the objective of making a historical search to the present day on the incidence of malocclusions and the use of space maintainers.

MATERIALS AND METHODS

Experimental and clinical studies were included (case reports, retrospective, prospective and randomized trials) with qualitative and / or quantitative analysis. Initially, the key words were determined by searching the DeCS tool (Descriptors in Pubmed, Health Sciences, BIREME base) and later verified and validated by MeSh system (Medical Subject Headings, the US National Library of Medicine) in order to achieve consistent search.

Mesh Terms

The words were included Malocclusion, Space maintainer, Orthodontics, Social trends of beauty. The literature search was conducted through online databases: Pubmed, Periodicos.com and Google Scholar. It was stipulated deadline, and the related search covering all available literature on virtual libraries.

Series of Articles and Eligibility

A total of 35 articles were found involving Malocclusion and Space maintainer. Initially, it was held the exclusion existing title and duplications in accordance with the interest described this work. After this process, the summaries were evaluated and a new exclusion was held. A total of 25 articles were evaluated in full, and 16 were included and discussed in this study.

Literature Review

The concern for irregular orthodontic aesthetics has been long since antiquity. Problems such as cluttered and irregular tooth disorders, and alleged attempts at corrections date back at least 1,000 years (BC) (Alencar, 2007 and Wahl, 2005). There are historical records of antiquity found in excavations, which prove the use of orthodontic appliances by the Greek and Greek peoples. Although the various reports and evidence on the aesthetic desire for dental alignment dating well before Christ, it was around the year 1700 that the first significant orthodontic events occurred (Alencar, 2007 and Moyers, 1991). In 1728, the French dentist Pierre Fauchard published a book called "The Dentist Surgeon". In it, Fauchard used a device called "Bandeau", a horseshoe-shaped piece made of precious metal that helped to expand the arch and align the teeth (Modesto, 2010). According to Modesto et al. (Modesto, 2010), the emergence of the term orthodontics is dated 1841 by Joachim Lefoulon, with the earliest books published around 1880, called the "Treaty of Oral Deformities" written by a dentist, writer, sculptor and artist, Norman Kingsley (1829-1913). The mid-nineteenth century, propelled in search of response to orthodontic problems, arises in the city of Herrick, Pennsylvania, considered by many as the father of modern orthodontics, Edward Hartley Angle (1855-1930) who, with his therapeutic proposals directly substantiated the treatment of dental corrections for malocclusions (Dario, 2013). According to Angle's studies, dental disconjugation, caused by malocclusion, has been subdivided into classes (I, II, III) and as treatment measures for these classifications have resorted to the improvement and new designs of orthodontic devices [4]. In contribution to Angle's work, orthodontics achieved a respectable recognition with dentistry specialty. And it was at the time of his work that Angle formed disciples such as Tweed, Charles H. and Cecil Steiner.

In contemporary days, the studies published by Edward H. Angle, [...] "based on the relation of the first lower molars to the maxilla, allowed the malocclusions to be methodically characterized, and their universal acceptance is the best proof of their simplicity and Practicality " (Wahl, 2005). Until then, the institutional practices and forms of knowledge performed by modern orthodontic medicine contemplated only the overcoming of individualistic thinking, only from the 16th century onwards. XXI, these resources have been expanded with clinics competing for public health (Wahl, 2005). As Pinto et al. (Pinto, 2000), points out, society in recent years has been assuming new paradigms with quality of life and care for oral health has led the social individual to seek treatment resources for the services offered, whether public or private.

Many factors contribute to the causes and consequences of malocclusion, which is considered a complex problem to be discussed and treated superficially, since it is interrelated to the social determinants of oral health, such as the individual's socioeconomic conditions, Behavior, access to oral hygiene products, level of schooling, access to food and especially access to health services for orthodontic treatment and prevention (Silveira, 2016). The facial performance brings with it values interfered with the social tendencies of beauty in search of the prevailing perfection. Attractive status trends have effects on the individual's self-esteem and are evident in several age groups and are present in all environments, whether family, school, or in the labor market (Silveira, 2016). Studies have shown that the perception of facial appearance, in addition to affecting the social behavior and mental health of the individual, also has significant implications in social bonds (Sarver, 1998).

Among other factors, these have, since the 1950s, boosted technological advances in oral aesthetics, have led several companies to develop new systems and high-tech materials in order to make orthodontic treatment accessible, effective, comfortable, less visible And in the proportion of satisfactory and short-term results (Modesto, 2010). With this, the demands on the quality of life, the self-image triggered by the psychosocial impact of human dental aesthetics, has been growing substantially in search of orthodontic resources. And in view of the factors of early loss of teeth (due to trauma or caries), we have pointed to the relevance of space maintainers and their use for treatments of this kind (Wahl, 2005).

DISCUSSION

In consideration of the terms, epidemiological studies demonstrate that for malocclusions or malocclusions, this is any deviation from a physiologically acceptable contact between dental arches (Paiva, 1997). Faced with the causes responsible for the incidence of malocclusions or malocclusions, the interaction of acquired factors is highlighted: accidental trauma; Congenital; Heritable; Of local or general order, as well as by deleterious factors (Moyers,, 1991). The implications of the malocclusions for the individual in the aesthetic and social insertion contexts are shaped by the negligence of public health policy actions. According to the different severities and occlusal pathological conditions, the indications of space maintainers are diverse and contradictory to many researchers and scholars. In agreement with the factors of complex orthodontic treatments triggered by the mal occlusions, the space maintainers are to be applied and made specifically to fulfill the requirements of preservation of the space caused by diverse factors (Mozeli Keila, 2015).

After malocclusion testing by clinical and radiological diagnoses with dental professionals, the treatment by the patient should be started soon, avoiding the onset of functional and aesthetic problems, since carelessness leads to other seriousness (Mozeli Keila, 2015). The space maintainers are considered orthodontic devices that act in the substitution of one or more deciduous teeth and are used to preserve the space destined to the permanent permanent tooth, without it becoming impacted or suffering deviations during its eruption 3. The maintainers are classified as to their functionality (functional and non-functional) and their fixation (fixed and removable). Functional devices are especially indicated in cases of greater probability of loss of space in the vertical direction, in addition to the mesiodistal (Alenca, 2007). For Cordioli (1997) and Modesto (2010), the nonfunctional apparatus maintains the space present for the eruption of the permanent successor, maintains the perimeter and shape of the arc, preventing the deviation of the midline. The main space maintainers used in fixed appliances are: Strap Band, Fixed Functional Aesthetic, Nance Lingual Arch, Nance Button and Palatal Bar. The removable ones stand out among: Modified Hawley plate, Simple spring, Spring of Benac. These are basically composed of specific staples and acrylic resin, and are therefore suitable for the possible cases and treatments desirable to the fulfillment of their function (Dario, 2013).

The types of maintainers stand out in the class I, II and III modalities of the malocclusion presented by the patient. In the proportions of advantages, the removable ones stand out by the following factors: practicality in the hygiene; Posterior and anterior segment rehabilitation; Aesthetics; More affordable cost; Maintenance of the cervical-occlusal space, as well as the mesiodistal and space for normal accommodation of the tongue, avoiding its interposition (Alencar, 2007 and Dario, 2013). However, the disadvantage is: possibility of losses; Fractures; Patient attendance and collaboration. The fixed maintainers bring with them numerous advantages, we emphasize therefore: assertive maintenance of the space; No loss of the appliance (once installed, will stay fixed); Little patient collaboration for use. At the disadvantage are the factors of non-restoration of the masticatory function and generally do not prevent the extrusion of the antagonist (Silveira, 2016). In all aspects, the transcendence of the treatment should count on the patient's assiduity with the professional of the branch. However, the major challenges faced by dental professionals in their precepts of professional integrity, knowledge and training are through the interdisciplinary search for excellence in the aesthetic conditions of the individual, be it in the psychosocial, emotional and physical aspects, considering the achievement of satisfactory functional to the patient (Silveira, 2011).

Conclusion

With reference to the explored bibliographical literature it is observed that the malocclusion, from the past to the contemporary days, has assumed significant impacts on the life of the human being, since they are influenced by the political, economic and sociocultural aspects. In a determinant way for the self-esteem, psychological and emotional, it is considered that the fixed or removable space maintainers are currently the most suitable device for the treatment of malocclusion.

Conflict of interests: There is no conflict of interest between authors.

REFERENCES

- Alencar, C. R. B.; Cavalcanti, A. L.; Bezerra, P. K. M. Perda precoce de dentes decíduos: etiologia, epidemiologia e consequências ortodônticas. Publicatio UEPG: Ciências Biológicas e da Saúde, Ponta Grossa, v. 13, p. 29-37, mar./jun. 2007.
- Bezerra, Priscilla Kelly Medeiros. Características e distribuição das maloclusões em pré-escolares. Salvador, v. 5, n. 2, p. 117-123, mai./ago. Minas Gerais: Universidade Federal de Minas Gerais, 2006.
- Dario, Luana Regina Schleder. A importância dos mantenedores e recuperadores de espaço na abordagem clínica infantil. Londrina: UEL, 2013.
- Diniz, M. B.; Silva R.C.; Zuanon A. C. C. Perda dental precoce e manutenção de espaço na dentadura decídua: relato de um caso clínico. JBP Revista Ibero-Americana de Odontopediatria & Odontologia do Bebê, Curitiba, v.8, n. 44, 2005.
- Fritscher, A. et al. Considerações sobre a oclusão e malocclusão na criança. Revista ABO Nacional. Rio de Janeiro, v.6, n. 2, p. 89-94, abr.-maio, 1998.
- Modesto, Sara da Silva Modesto. Mantenedores de espaços. São José do Rio Preto: ETEC Philadelpho Gouvêa Netto, 2010.
- Moyers, R.E. Etiologia da malocclusão. In: _____. Ortodontia. 4.ed. Rio de Janeiro: Guanabara Koogan, 1991. cap.10, p.167-186
- Mozeli Keila Vieira Mozeli. Ortodontia em saúde pública. Revista Odontologia. São Paulo: USP, 2015.
- Paiva, H. J.; Cavalcante, H. C. C. Oclusão natural. In: _____. Oclusão: noções e conceitos básicos. São Paulo: Santos, 1997. p.65-76.
- Pinto, V. G. Identificação de problemas. In: _____. Saúde bucal coletiva. ed. 4. São Paulo: Santos, 2000.
- Pinto, V. G. Saúde bucal coletiva. ed. 4. São Paulo: Santos, 2000. In: _____. Almeida, Anderson Barbosa de. Prevalência de má oclusão e necessidade de tratamento ortodôntico em escolares de 12 anos de idade na cidade de Juiz de Fora, Minas Gerais. Juiz de Fora: Universidade Federal de Juiz de Fora, 2010.
- Rerin S. Tratamento Interceptativo na dentição mista: alternativas e época de intervir. Canoas: FUNORTE; 2013.
- Sarver, D. M. Facial analysis and the facial esthetic problem list: coordination of facial analysis with the skeletal and dental components. In: _____. Esthetic orthodontics and orthognathic surgery. Saint Louis: Mosby-Year Book, 1998. p.2-7.
- Silveira, Marise Fagundes; FREIRE, Rafael Silveira; NEPOMUCENO, Marcela Oliveira, et al. Gravidade da malocclusão em adolescentes: estudo de base populacional no norte de Minas Gerais. Brasília: Revista Saúde Pública, 2016.
- Tanaka O; Camargo ES; Maruo H; Guariza-Filho O. Classificação das maloclusões. Paraná: Pontificia Universidade Católica do Paraná, 2011.
- Wahl, N. Orthodontics in 3 millennia. Chapter 1: antiquity to the mid-19th century. American Journal of Orthodontics and Dentofacial Orthopedics, Saint Louis, v.127, n.2, p.255-259, feb. 2005.