Bulletin of Environment, Pharmacology and Life Sciences
Bull. Env. Pharmacol. Life Sci., Vol 11 [11] October 2022 : 09-12

Online ISSN 2277-1808
Journal's URL:http://www.bepls.com
CODEN: BEPLAD

ORIGINAL ARTICLE **OPEN ACCESS**

A Study to Evaluate Preference of General Dentist for Orthodontic and Prosthodontic Treatment Options for Peg Lateral

***1Shaheen Shamsuddin, 2Vinod Babu Mathew, 3Sajna Ashraf, 4Jimly James Kunjappu, Abdullah Saeed Abdullah Shiban**

[1]Department of Orthodontics, College of Dentistry, King Khalid University, Abha , Saudi Arabia
[2]Department of Restorative Dental Science, College of Dentistry, King Khalid University, Abha, KSA
[3]Department of Oral Medicine and Diagnostic Sciences, Vision College of Dentistry and Nursing, Vision Colleges Riyadh
4Department of Periodontics and Community science, College of Dentistry
King Khalid University, Abha, KSA
[5]Dental Intern, College of Dentistry, King Khalid University, Abha, KSA
*Corresponding Email: drshaheenvs@hotmail.com

ABSTRACT

The development or growth of a tooth bud that goes awry is what leads to hypoodontia. An example of a prevalent condition with varying articulation is the birth without at least one tooth but no other obvious clinical problems.[1]. The most prevalent cause of size differences is variation in tooth morphology brought on by late disturbances in the differentiation process. This variation in the development of stake-shaped or mesiodistally absent maxillary sidelong incisors 1–5 suggests that the gene(s) responsible for hypodontia may be unrecognized. The aim of this trial was to use a self-reported survey to examine general practitioners' awareness of the need for prosthodontic, orthodontic, or integrative therapy approaches for the management of peg-shaped lateral incisors. A cross-sectional trial was conducted utilising a 16-question questionnaire that was sent as well as circulated to a random sample of 100 general dental surgeons who volunteered to participate. The outcomes were self-explanatory. According to 91 percent of respondents, the most essential treatment goal was to improve aesthetics. 91% of respondents said that combining orthodontic as well as prosthodontic approaches was the best way to attain the best treatment conclusion. According to our findings, pre-restorative orthodontic treatment is the most effective method for controlling peg lateral incisors. For the best treatment outcome, a multidisciplinary approach to complex dental treatment is always preferable. Such methods are also used to establish a referral system.

"Key Words: *Peg shaped, Lateral incisors, Orthodontic treatment, Prosthodontic treatment"*

Received 12.05.2022 Revised 21.06.2022 Accepted 05.09.2022

INTRODUCTION

Hypoodontia is caused by abnormalities in the development of the tooth bud at the beginning or throughout its proliferation [1]. One or more teeth are usually considered a hereditary dominant disorder with various manifestations when there are no systemic illnesses present at birth. During the differentiation process, late perturbations may alter the tooth morphology, which is the most common source of size disparities. Maxillary lateral incisors that are peg-shaped or mesiodistally deficient are less likely to show hypodontia for unknown reasons. Peg lateral incisors are defined as "an undersized, tapering, maxillary lateral incisor," but they can also be caused by other dental abnormalities like canine transposition or over-retained deciduous teeth. A midline diastema is more likely to occur in patients with peg-shaped lower incisors because the central incisors tend to move distally [2-5]. Without other inherited causes or behaviours, these people may have generally normal dentitions. Altered permanent teeth and hypodontia were found to occur in 4 percent of the population. Studies have indicated that formative malformations, such as stake-molded maxillary parallel incisors, are more common on the left side of the maxilla. Although there are other types of dental abnormalities, stake formed parallel incisors are by far the most prevalent (6-10). Long, parallel, and stake-shaped maxillary incisors are more common in certain racial/ethnic groups and genders than in others. In addition to being more common among Mongoloid individuals and orthodontic patients, the condition also disproportionately affected females and those undergoing treatment for malocclusion. Unbiased lateral incisors are just equally abundant on either side as they are on either side

of the mouth. A whopping 55% of people with peg-shaped maxillary permanent lateral incisors on one side of their mouths ended up with hypodontia on the other. [11-15]. Prosthodontists and orthodontists have historically had a hard time treating a young kid with anterior spaces and/or a peg-shaped lateral incisor. In most cases, one of two methods may be used to fix this issue. The first method, used if tooth loss is imminent, involves saving empty sockets for autotransplantation or prosthodontic reconstruction. Another option is to close the voids with orthodontics and subsequently restore the peg lateral through prosthetic techniques, such as changing the shape to mimic the central incisor. Each of these treatments has its own set of benefits along with drawbacks, plus the current situation also influences the treatment plan or approach. Different approaches are used depending on variables such as the difficulty of the obstruction, the accessibility of the region, the length of the roots of the lateral incisors, the canine's form and color, and its location.

Additionally, the type of treatment should be selected based on the patient's aesthetic and functional needs, the necessity for extractions, and the possibility of planning prosthodontic and orthodontic treatment simultaneously. [10-19] Restorative dentistry has benefited greatly from the advent of acid-etch techniques and novel adhesive solutions. It also gives us the option of using an integrated method to manage space closure and peg lateral restoration in the most efficient way possible. Because the results of a single approach, such as prosthodontics or orthodontics, are rarely sufficient. The primary goal of this research is to provide a questionnaire to general dentists to assess their level of knowledge and comfort with the concept of treating peg-shaped lateral incisors using prosthodontic, orthodontic, or combination methods.

MATERIAL AND METHODS

A cross-sectional trial was designed to conduct a survey utilising a 16-question questionnaire that was sent and distributed to random people using the local dentistry association data bank. The study included 100 general dental surgeons who volunteered to participate. The questionnaire had the following format, and the responses were recorded and analysed electronically.

RESULTS

In our study, 65 percent of dentists were male and 35 percent were female. The majority of total respondents (76%) have been in dentistry practise for less than 10 years. For the care of peg lateral incisors, 55 percent of respondents required the services of both an orthodontist and a prosthodontist (Figure 1). In such circumstances, about 40% of respondents undertake the diagnostic wax up. After completing orthodontic treatment, 39 percent of respondents elected to arrange prosthetic therapy, with full coverage crowns being the most popular option for rehabilitation. When a peg lateral tooth was scheduled for extraction in order to achieve the best aesthetic result, single tooth implants were the treatment of choice, with responders stating that the width as well as height of the bone being the most significant factors to consider. Long treatment times were the most common source of discontent with the interdisciplinary approach to peg lateral incisor therapy. 43 percent of respondents said they had no trouble communicating with the specialist. As demonstrated in Table 1, 91 percent of dentists believe that improving aesthetics is a major goal of peg lateral management.

"FIGURE 1 How confident do you feel in treatment planning and treatment of peg lateral?"

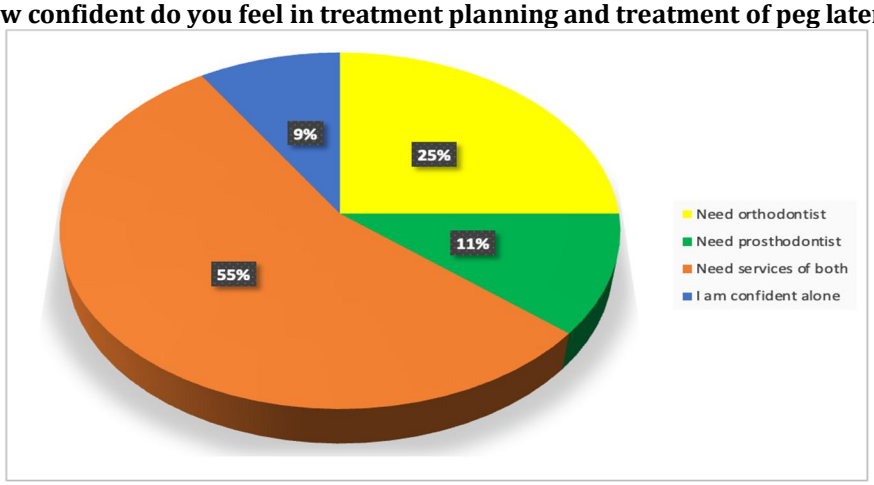

TABLE 1 Most important goal of the management of peg lateral

Answer Options	Response Percent
Correction of tooth size	2 %
Improve esthetics	91 %
Correction of occlusion	2 %
Correction of tooth position	5 %"

DISCUSSION

The purpose of this research was to assess the general dentist's knowledge of how to treat a patient with a peg lateral incisor, taking into account the patient's functional and cosmetic requirements. When space opening is recommended, both orthodontists as well as prosthodontists play a crucial role in determining and establishing space requirements, as Abu Hussein M et al determined, which is similar to our findings [5, 6, 7]. Based on the findings of our meta-analysis, dental inserts should be considered as the standard of care for replacing maxillary parallel incisors that are lost at birth. [6,7] In the case that dental inserts are not an option, you may choose from a variety of partial dentures, including fixed full-inclusion dentures, gum-supported spans, or detachable partial dentures [7, 8]. Due to recent legislative reforms, a plethora of previously inaccessible complex duties are now well within the scope of training for general dentistry professionals. The factors that influence a general dentist's decision to refer a patient to a specialist include the dentist's level of expertise, the patient's expectations, the availability of specialists in the same dental office, the availability of specific dental treatment in the locale, the duration of treatment, the financial responsibility, the patient's inspiration, and many others. [9–12] When a patient needs prosthetic rehabilitation yet has malaligned teeth, a pre-restorative orthodontic alignment may help. Exodontia is no longer a prominent therapeutic option unless the practitioner is dealing with severely infected or disfigured teeth. For the best aesthetic result, even deformed teeth are kept and corrected. According to Lee JH et al., fundamental steps in the demonstrative work-up of these instances include a comprehensive discussion of preventative orthodontics, a vision of the end via a symptomatic wax-up, and the agreement on a subsequent full treatment plan. [13] In our survey, about 40% of respondents chose to conduct diagnostic wax up for optimal treatment planning, which is similar to that conclusion. Pre-restorative alignment's advantages have been widely demonstrated [14-16]. It is especially beneficial for people seeking prosthetic rehabilitation who have a misaligned dentition. A maxillary sidelong incisor that is spike shaped or generally twisted is a common condition that may be helped with orthodontics. Possible therapeutic options for the overburdened tooth include re-establishing a parallel incisor that has gotten firmly shaped to its not anticipated size. If there is enough space, a composite restoration may be placed prior to orthodontic therapy. However, the lateral incisors often cannot be repaired due to a lack of space. Therefore, orthodontics is often necessary to allow room for the growth of peg-shaped lateral incisors. After orthodontic treatment, Sadowsky SJ and Zitzmann NU et al. [17, 18] advocate full cast crowns for peg lateral incisors. The findings were similar to those of our study, in which the majority of respondents chose rehabilitation treatment to full cast crowns after orthodontic treatment. Peg lateral incisors need a comprehensive approach if aesthetic standards are high and the malocclusion is severe. Based on the findings of the present research, general dentists would rather fix a lateral incisor that has become peg-shaped with an implant than remove it. The effectiveness of the treatment plan is dependent on open lines of communication with the professional. The level of communication amongst general dentists as well as orthodontists for the management of difficult situations has been assessed in previous studies. [19] Excellent treatment results with high patient and clinician satisfaction are achieved when orthodontists and prosthodontists work together to care for peg lateral incisors, regardless of the mode of transmission used. The team method is the widely accepted idea for complex therapy these days. Our study aimed to provide one such example of an all-encompassing strategy for a variety of dental care options.

CONCLUSION

Every case will be planned differently depending on the presentation, patient attitudes, circumstances, and other aspects. The goal of this study was to uncover and categorise some of the common misconceptions about peg lateral therapy and to identify places where general dentists might work more effectively to get better results. The optimum treatment outcome for Peg lateral incisor is a multidisciplinary approach involving orthodontists and prosthodontists. In developing countries, the referral system to specialists must be enhanced.

REFERENCES

1. Kokich VO, Kokich VG, Kiyak HA. Perceptions of dental professionals and laypersons to altered dental esthetics: Asymmetric and symmetric situations. Am J Orthod Dentofacial Orthop. 2006;130:141-151.
2. Abu-Hussein M, Abdulgani A, Watted N, Zahalka M (2015) Congenitally Missing Lateral Incisor with Orthodontics, Bone Grafting and Single-Tooth Implant: A Case Report. J Dent Med Sci 14: 124-130.
3. Abdulgani A, Kontoes N, Chlorokostas G, Abu-Hussein M (2015) Interdisciplinary Management Of Maxillary Lateral Incisors Agenesis With Mini Implant Prostheses: A Case Report. J Dent Med Sci 14: 36-42
4. Abusalih A, Ismail H, Abdulgani A, Chlorokostas G, AbuHussein M (2016) Interdisciplinary Management of Congenitally Agenesis Maxillary Lateral Incisors: Orthodontic/Prosthodontic Perspectives. J Dent Med Sci 15: 90-99.
5. Abu-Hussein M, Watted N, Abdulgani A, Borbély B (2015) Modern Treatment for Congenitally Missing Teeth: A Multidisciplinary Approach; International Journal of Maxillofacial Research 1: 179-190
6. Abu-Hussein M, Chlorokostas G, Watted N, Abdulgani A, Jabareen A (2016) Pre-Prosthetic Orthodontic Implant for Management of Congenitally Unerupted Lateral Incisors – A Case Report. J Dent Med Sci 15: 99-104
7. Abu-Hussein M, Watted N, Hegedus V, Péter B (2015) Congenitally Missing Upper Laterals. Clinical Considerations: Orthodontic Space Closure 1: 1-6
8. Rendon J (2005) Effect of congenitally missing lateral incisors on the eruption and impaction of the maxillary canine: Saint Louis University.
9. Ghiabi E, Matthews DC. Periodontal practice and referral profile of general dentists in Nova Scotia, Canada. J Can Dent Assoc 2012;78:c55.
10. Small BW. Decision-making in full-arch restorative dentistry: part 2. Gen Dent 2010;58:10–3.
11. Maupome G, Schrader S, Mannan S, Garetto L, Eggertsson H. Diagnostic thinking and information used in clinical decision-making: a qualitative study of expert and student dental clinicians. BMC Oral Health 2010; 10:11.
12. Lee JH, Bennett DE, Richards PS, Inglehart MR. Periodontal referral patterns of general dentists: lessons for dental education. J Dent Educ 2009;73:199–210.
13. Spalding PM, Cohen BD. Orthodontic adjunctive treatment in fixed prosthodontics. Dent Clin North Am. 1992; 36(3):607-629.
14. Kokich V, Spear F. Guidelines for managing the orthodonticrestorative patient. SeminOrthod. 1997;3:3-20.
15. Schmitz J, Coffano R, Bruschic A. Restorative and orthodontic treatment of maxillary peg incisors: a clinical report. J Prosthet Dent. 2001;85:330-334.
16. Chaushu S, Becker A, Zalkind M. Prosthetic considerations in the restoration of orthodontically treated maxillary lateral incisors to replace missing central incisors: a clinical report. J Prosthet Dent. 2001;85(4):335-341.
17. Sadowsky SJ. An overview of treatment considerations for esthetic restorations: a review of the literature. J Prosthet Dent. 2006;96(6):433-442.
18. Zitzmann NU, Galindo ML, Hagmann E, Marinello CP. Clinical evaluation of ProceraAllCeram crowns in the anterior and posterior regions. Int J Prosthodont. 2007; 20(3):239-241.
19. Bibona K. Examination of the communication practices and preferences between orthodontists and general dentists. 2014

CITATION OF THIS ARTICLE

S Shamsuddin, V B Mathew, S Ashraf, J J Kunjappu, A S A Shiban. A Study to Evaluate Preference of General Dentist for Orthodontic and Prosthodontic Treatment Options for Peg Lateral. Bull. Env.Pharmacol. Life Sci., Vol 11 [11] October 2022 : 09-12