

A STUDY TO EVALUATE PREFERENCE OF GENERAL DENTIST FOR ORTHODONTIC AND PROSTHODONTIC TREATMENT OPTIONS FOR PEG LATERAL

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ABSTRACT

Background and objective: Hypodontia is caused by anomalies in the tooth production process during the beginning or proliferation of the tooth bud. 1. An hereditary dominant syndrome with varied expression is the congenital absence of one or more teeth in absence of systemic problems. 1. Size differences are most typically caused by changes in tooth morphology caused by late perturbations during the differentiation process. 1-5. Though the gene(s) producing hypodontia are unknown, peg-shaped or mesiodistally deficient maxillary lateral incisors show variance in the trait's expression 1-5. 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.

Methodology: 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.

Results: 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.

Conclusion: Pre-restorative orthodontic therapy is the best option for peg lateral incisor control, according to our research. 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

INTRODUCTION

Hypodontia is caused by abnormalities in the development of the tooth bud at the beginning or throughout its proliferation. 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. For unexplained reasons, peg-shaped and mesiodistally deficient maxillary lateral incisors differ in their ability to exhibit hypodontia (1-5). Canine transposition and over-retained deciduous teeth are two examples of additional dental abnormalities that may be associated with peg lateral incisors, which are characterized as "an undersized, tapering, maxillary lateral incisor." A midline diastema is more likely to occur in patients with peg-shaped lower incisors because the central incisors tend to move distally. Without other inherited causes or behaviours, these people may have generally normal dentitions. The combined incidence of hypodontia and permanent tooth anomalies was found to be 4%. 8. Peg-shaped maxillary lateral incisors, as well as other developmental anomalies, have been linked to a greater occurrence on the left side of the maxilla in previous investigations. Dental abnormalities, such as peg-shaped lateral incisors, are more common than other dental anomalies (6-10). People of different races, ethnicities, and genders are more likely to have peg-shaped maxillary permanent

lateral incisors than others to have them. Mongoloid people, orthodontic patients, and women exhibited higher rates of prevalence than the general population. 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]. Treating a young child with anterior spaces and/or a peg-shaped lateral incisor has always been difficult for prosthodontists and orthodontists. In general, there are two main techniques to resolving this problem. If extraction is anticipated, the first technique seeks to maintain spaces for future auto transplanting or restore with a prosthodontic approach. 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. The type of existing occlusion, space circumstances, breadth of lateral incisor and root length, form and shade of canine, position of canine, and other elements all influence how an approach is chosen.

Aside from that, the type of treatment should be chosen based on the patient's aesthetic and functional needs, the need for extractions, and the possibility of coordinating prosthodontic as well as orthodontic treatment. [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 study's goals and objectives are to conduct a survey utilising a questionnaire to assess general dental practitioners' knowledge and understanding of the demands for prosthodontic, orthodontic, or integrated treatment approaches for peg-shaped lateral incisor care.

METHODOLOGY

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?

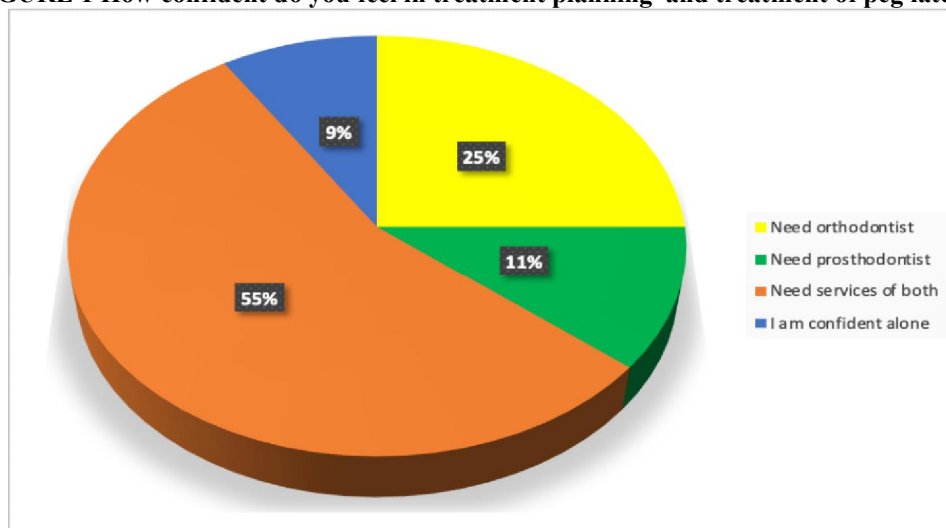


TABLE 1 Most important goal of the management of peg lateral

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

DISCUSSION

In this study, we attempted to examine the general dentist's understanding of how to handle a patient with a peg lateral incisor based on the patient's functional and aesthetic needs. 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]. Dental implants are the most usually employed to restore congenitally missing maxillary lateral incisors once skeletal maturity has been attained, according to our survey findings. [6,7] When dental implants are not an option, the following three choices are available: removable partial dentures, resin bonded bridges, and full coverage fixed partial dentures [7,8]. Dental practise legislation allows general dentists to do a wide range of complicated procedures that are normally only performed by dental specialists. The decision of a general dentist to treat a patient or refer them to a specialist is based on the general dentist's competence, the patients' expectations, the available specialists in the same dental office, the accessibility of specialised dental treatment in the region, the time involved, the cost of treatment, the patient's motivation, and other factors. [9–12] Pre-restorative orthodontic alignment has specific advantages, particularly in patients needing prosthetic rehabilitation who have malaligned teeth. 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., a complete discussion of pre-restorative orthodontics, vision of the end result through a diagnostic wax-up, and agreement on a sequential comprehensive treatment plan are all critical steps in the diagnostic work-up of these instances. [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 peg-shaped or deformed maxillary lateral incisor is a typical orthodontic-restorative issue. In some cases, restoring a peg-shaped lateral incisor to its proper dimension is the best option for treating the deformed tooth. A composite restoration can be implanted before orthodontic treatment if there is enough room. In most cases, however, there is not enough room to repair the deformed lateral incisors. As a result, orthodontics is frequently required to make space for the development of peg-shaped lateral incisors. Full cast crowns were recommended as a final restoration for peg lateral incisors after orthodontic treatment by Sadowsky SJ and Zitzmann NU et al [17, 18]. 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. A multidisciplinary approach is always indicated when aesthetic demands are high and the malocclusion is severe in patients with peg lateral incisors. In the current study, general dentists prefer implant repair over extraction of a peg-shaped lateral incisor to attain superior aesthetic and functional results. Communication with the specialist is critical to the treatment plan's success. The level of communication amongst general dentists as well as orthodontists for the management of difficult situations has been assessed in previous studies. [19] Involvement of orthodontists and prosthodontists in the care of peg lateral incisors provides outstanding treatment outcomes with high patient and clinician satisfaction in any communication method. The team method is the widely accepted idea for complex therapy these days. One of the examples of such a comprehensive approach to numerous dental treatments was the goal of our research.

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.

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