



ATTITUDE AMONG GENERAL DENTAL PRACTITIONERS OF HYDERABAD TOWARDS MANAGEMENT OF MUTILATED ANTERIOR TEETH – A QUESTIONNAIRE BASED STUDY

Dr. Suraj R

Post graduate Department of Conservative dentistry and Endodontics, Sri Sai College of Dental Surgery, Vikarabad.

Dr. Shekar K

MDS, Professor and Head of the Department Department of Conservative dentistry and Endodontics, Sri Sai College of Dental Surgery, Vikarabad.

Dr. Shanti Priya P*

Post graduate Department of Conservative dentistry and Endodontics, Sri Sai College of Dental Surgery, Vikarabad. *Corresponding Author

Dr. Himabindu R

Post graduate Department of Conservative dentistry and Endodontics, Sri Sai College of Dental Surgery, Vikarabad.

Dr. Sravanthi R

Post graduate Department of Conservative dentistry and Endodontics, Sri Sai College of Dental Surgery, Vikarabad.

ABSTRACT

Maxillary anterior teeth play a key role in giving esthetic appearance to the face of any person improving ones confidence levels. At the same time maxillary anterior teeth are the most common teeth to get fractured. This study was carried out to evaluate the awareness and approach among general dental practitioners of Hyderabad when they are faced with a clinical scenario of managing mutilated maxillary anterior teeth.

180 questionnaire sheets were prepared with questions related to management of mutilated anterior teeth which were handed over randomly to general dental practitioners in Hyderabad and their opinions have been analyzed. From the present survey it is clear that most of the general dental practitioners know the importance of post and core to save a severely fractured anterior tooth but they lack the skills needed for the treatment. So we have to encourage GDPs to attend regular programs to educate themselves and improve their practical skills regarding management of mutilated teeth.

KEYWORDS : Mutilated teeth, General dental practitioners, Post and core.

INTRODUCTION

In our modern competitive society, a pleasing appearance often means the difference between success and failure in both our personal and professional lives. Smile is a person's greatest beauty asset. A beautiful smile can be achieved when there are healthy anterior teeth. The anterior teeth are the most common teeth to get fractured affecting the esthetics of face¹. 5 – 13% of all injuries to permanent anterior teeth are complicated fractures (involving enamel, dentin and pulp)². A restoration of any tooth should fulfill three requirements- form, function and esthetics.

In case of a complicated fracture of anterior teeth the restoration of choice is usually root canal treatment followed by core buildup with a resin composite, or root canal treatment followed by post- core and crown³. However for certain extensive fractures when restoration is not possible extraction is the treatment of choice.

General dental practitioners form a major component of dental practitioners in urban and rural population working in either private or government hospitals. In Hyderabad the proportion of general dental practitioners rendering dental care is almost similar to specialists and consultants. Therefore, evaluating the different philosophies and techniques applied by general dentists in managing mutilated teeth is crucial for reducing failure rates and ensuring a high standard of care for patients⁴.


Several studies have revealed that the majority of general dentists do not comply with the formulated guidelines on the quality of root canal treatment. Previous studies investigated the attitude of dentists in Western countries such as Germany, UK, Belgium and the USA. Morgano et al (1994) and Hussey (1995) had evaluated the practice followed in restoring ETT in the United States and United Kingdom respectively⁵. On the other hand, few studies have investigated the attitude of general dental practitioners toward various aspects of dental treatments in developing countries. This study focuses on evaluating the awareness and approach among general dental practitioners of Hyderabad when they are faced with a clinical scenario of managing mutilated upper anterior teeth.

METHODOLOGY

This study is based on a self-administered questionnaire survey. A questionnaire was distributed to general practitioners in private dental clinics in Hyderabad. The questionnaire was distributed randomly to 180 GDPs and hand collected after one week. A total of 162 (90%) questionnaires were collected. The study was conducted between March and April 2018. This questionnaire consisted of 5 questions regarding management of mutilated anterior teeth. The questionnaire form is summarized below (fig 1). The collected data were analyzed.

QUESTIONNAIRE FORM

1. Which treatment do you prefer for the above mentioned situation (11) and why?



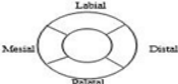
A. Post and core.
B. Extraction followed by implant.
C. Fixed partial denture.

Why _____

2. What is the minimum ferrule height required for durability of cast post?

A. 2.5 mm.
B. 2 mm.
C. 1.5 mm.
D. 1 mm.

3. Which is the most important wall of upper incisor tooth for a post?



4. Do you have an idea under which clinical situation a core buildup is required / post and core is required?

a) Yes
b) No

5. How often do you attend continuing dental education programs/ conferences?

A. Once annually.
B. Twice annually.
C. Occasionally.
D. Never

Figure 1: Questionnaire Form

RESULTS

The results are summarized in graphical representation below (fig 2, 3, 4, 5, 6). In total, 162 (90%) respondents completed the questionnaires. Most of the respondents (50%) had more than 5 years of professional experience as a dentist. In this survey most of the dentists (79%) prefer to treat mutilated anterior teeth with root canal treatment followed by post and core. In an attempt to know the awareness of dentists regarding post and core, 66.8% of dentists choose 2.5mm as minimum ferrule height required for durability of

cast post and core, 58% of dentists choose labial wall as important wall for retention of post. 88% of dentists do not have an idea in which conditions post and core is indicated. 58% of dentists occasionally attend continuing dental education programs which are very helpful for enhancing their knowledge on dental treatments.

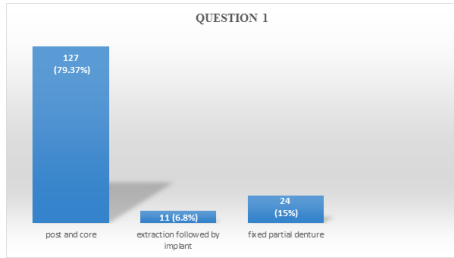


Figure 2

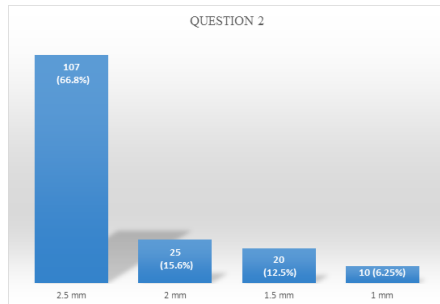


Figure 3

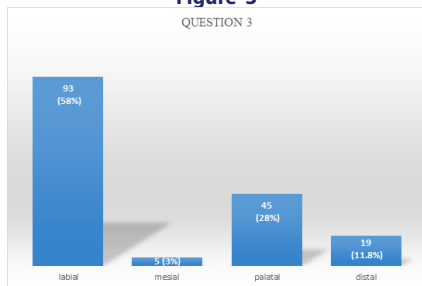


Figure 4

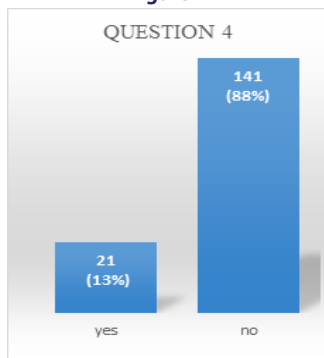


Figure 5

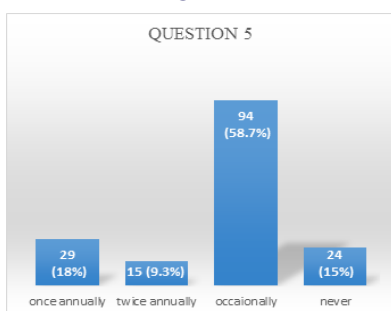


Figure 6

DISCUSSION

Treatment planning is a critical yet inexact aspect of clinical dentistry. The fractured upper anterior teeth is a clinical scenario that can be seen very often by GDPs. In a large group of clinicians, it is inevitable that there will be differences of opinion. On an everyday basis, clinicians are faced with the dilemma of maintaining a treatable tooth (or teeth) versus extraction and replacement with an implant-supported prosthesis. In part, this is due to a lack of definitive studies demonstrating that implant-supported restorations provide superior outcomes relative to tooth-supported restorations or vice versa⁶. When formulating a prognosis and ultimately a treatment plan, the practitioner must consider multiple issues related to the patient in general and the tooth in particular. Extraction of the tooth leads to complications like loss of proprioception, bone loss over time which leads to unaesthetic black line between FPD and gingiva⁷.

Knowledge about different treatment options for preservation of mutilated anterior teeth like esthetic core buildup or root canal treatment followed by post and core buildup is important. A core buildup is just sufficient enough in cases having greater than 1/2 of residual tooth structure and ferrule effect can be obtained. Post and core is indicated in cases having less than 1/2 of residual tooth structure and/or limited ferrule effect⁸. In cases where the fracture line involving root and no ferrule can be obtained then extraction is the best option.

The purpose of the post placement is to retain the core foundation and not to reinforce an endodontically treated tooth. The literature shows that the post should only be used when there is no enough tooth structure to reinforce the core restoration. A ferrule is defined as "a metal band or ring used to fit around the root or crown of a tooth"⁹. The cervical zone of a complete crown restoration functions like a ferrule when encircling axial tooth structure between the core and preparation finish line. This ferrule effect has been shown to provide positive reinforcement to endodontically treated teeth by resisting leveraged functional forces, the wedging effect of tapered posts, and lateral forces exerted during post insertion¹⁰.

Libman and Nicholls demonstrated that 1.5 mm of axial wall height significantly enhanced endodontically treated teeth restored with cast posts and cores and complete crowns¹¹. For endodontically treated teeth restored with prefabricated posts, composite resin cores, and complete crowns, Ng et al reported that 2.0 mm of axial wall height beneficially increased their fracture resistance¹².

Surveys can serve as one of the important tools for knowing the knowledge and understanding of treatment approaches of clinicians in treating teeth¹³. In this survey, 79% GDPs opted for post and core shows that they are aware of treatment options to save the tooth. The practitioners are treating mutilated teeth based on their past experience without adhering to proper treatment guidelines. One of the biggest misconception is that post strengthens the tooth. But actually post only provides retention for the core it doesn't reinforce the tooth¹⁴. Many studies have proven that post actually decrease the fracture resistance of the tooth. But the importance of post can never be underestimated if done properly considering all factors like post length, post diameter, remaining dentin thickness¹⁵. Palatal aspect of the upper incisor is the most important wall to reinforce the post and core as it contains the most dense dentin and cingulum^{16,17}. In this survey only 28% of GDPs opted for palatal aspect and 58% opted for labial aspect showing their lack of awareness regarding limitations of post and core. In a study conducted by Zhi-Yue et al, it was found that a 2mm crown ferrule effectively enhanced the fracture resistance of an endodontically treated teeth when a cast post and core was used¹⁸. In this survey 66.8% of GDPs opted for 2.5mm as minimum ferrule for durability of post and core this again shows their lack of awareness regarding limitations of post and core.

When the GDPs were asked about how often they do attend continuing dental education programs, 65% of them answered that

they occasionally attend such programs. Due to lack of time or interest to upgrade themselves by attending continuing dental education programs is proving their ignorance in planning correct treatment plan.

CONCLUSION

As anterior teeth determines the smile and esthetics of face, it is important to properly treat or restore fractured anterior teeth. Most of the GDPs of Hyderabad know the importance of post and core to save mutilated anterior teeth. But they lack definite principles and concepts in giving a post and core restoration. Hence GDPs have to attend regular dental education programs and update their knowledge to improve the standard of treatment rendered by them.

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