International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319 – 6505, Impact Factor: SJIF: 5.995
Available Online at www.journalijcar.org
Volume 6; Issue 8; August 2017; Page No. 5562-5564
DOI: http://dx.doi.org/10.24327/ijcar.2017.5564.0751

Research Article

A MISSING MOLAR- CONSEQUENCES AND TREATMENT OPTIONS!

Grishmi Niswade., Girish Bhutada and Mitul Mishra

Department of Periodontology, Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Nagpur

ARTICLE INFO

Article History:

Received 26th May, 2017
Received in revised form 5th June, 2017 Accepted 6th July, 2017
Published online 28th August, 2017

Key words:

Molar, Alveolar Bone, Implant, Occlusion

ABSTRACT

Molars are the teeth that are generally affected by periodontitis and are subject to extraction in cases of untreated periodontitis. Lost teeth can have long term effects on the complete dentition which will eventually affect the quality of life of the individual. The treatment of missing molars is often overlooked by the patients since aesthetics is not that affected and the high cost of prosthetic treatment such as implants makes the patient agree to an empty space in the molar region. The replacement options in the present day include a removable partial denture (RPD), fixed partial denture (FPD), an autogenous tooth transplantation or a dental implant (DI), which option should be chosen is a debatable issue. This paper reviews the causes, consequences of a missing molar and what factors should be taken into account while deciding the treatment option.

Copyright©2017 ***Grishmi Niswade 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.*

INTRODUCTION

Epidemiological studies have shown that the frequency of tooth loss is decreasing and the attitude of patients towards undergoing extensive treatment for replacement of missing teeth is also changing drastically.[1] Posterior teeth are more commonly lost as compared to anterior teeth with first molars frequently lost[2] followed by second molars, second premolar and then first premolar. [3] The cause for tooth loss may vary from caries, periodontal disease, trauma, infection or failed endodontic treatments. Tooth loss can have serious consequences on the remaining dentition as well as the general well being of the individual. Patients with anterior tooth loss prefer to get the teeth replaced as aesthetics is affected but a significant proportion of patients also prefer to get their posterior teeth restored. Therefore, as dentists, it is our job to explain the patient the importance of replacing missing teeth and the assortment of treatment options available.

Consequences of not replacing a missing first molar

Following consequences may result if the first mandibular molar is not replaced and the second mandibular is present: [4]

Mesial drifting of second molars and distal drifting of second premolars- When the first mandibular molar is missing, the adjacent teeth drift into the space previously occupied by the molar. Trauma from occlusion results due to drifting of teeth. Drifting also results in formation of an open contact which can result in food impaction.

Corresponding author:* **Grishmi Niswade
Department of Periodontology, Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Nagpur

Rotation of mandibular second premolars

Uneven soft tissue and ridge contour- The healing process after extraction of a tooth results in an uneven contour of the ridge and soft tissue which needs to be corrected prior to any prosthetic replacement.

Occlusal interference in protrusion

Supra-eruption of opposing teeth- Supra-eruption of maxillary first molar results in alteration of embrasure space, root exposure, furcation involvement and trauma from occlusion.

Distal plunger cusp- Tipping of the adjacent teeth results in the formation of a distal plunger cusp which leads to food impaction.

Trauma from occlusion- Resulting from the changes in the alignment of adjacent teeth.

Current evidence suggests that these consequences of missing teeth are less frequent than historically believed.[5] However, if present, they should be explained to the patient and the necessary interventions should be taken.

Problems that can be faced by the patient [4]

The consequences of not replacing a missing molar may make the patient realise the existence of a dental problem through an acute episode. However, it becomes more difficult for the clinician to restore the dentition to normal at this stage due to the delay in treatment.

- Compromised aesthetics[1]
- Probability of developing periodontal disease or caries in future

- Temporomandibular joint disorders
- Trauma to the soft tissues

Problems concerned with treatment planning

A combination of the following treatment procedures may be required before any prosthetic treatment for missing tooth:

- Orthodontic treatment i.e. uprighting of mesially tilted second molars and rotated premolars is required to create adequate space for prosthesis of first molar. The time required for orthodontic correction of tilted teeth is short and of relatively low cost. Therefore they should be preferred over expensive restorative treatment.[6] A provisional restoration should then be given after the orthodontic treatment to stabilize the uprighted molars.
- Supra-erupted teeth disturb the occlusal plane. They must be reduced to correct the plane of occlusion.[7] Both endodontic and prosthodontic treatment may be required for the rehabilitation with full crown.
- Open contacts or open embrasures are often difficult to restore. Over-contoured crown is required in such cases.
- Pre-prosthetic surgery of soft tissue may be required for proper selection of pontic.[4]

Two factors ideal for the replacement of missing teeth are normal alignment of adjacent teeth and a normal plane of occlusion. The above treatment procedures should be carried out after the planning the treatment option for the missing molar.

Factors to be considered in treatment planning

Age and gender of the patient

Younger individuals demand an implant supported prosthesis rather than a conventional prosthesis. Females are more interested to have their teeth replaced as early as possible.

Financial considerations- It is a major factor affecting the treatment selection. Patients tend to opt for an affordable treatment option.

General health- Patients with systemic health problems such as uncontrolled diabetes, cardiac problems, patients undergone radiation therapy for cancers in head and neck region, that are relatively contraindicated for implant therapy should be treated by FPD for replacement of missing teeth.

Patient demands- Outlook of a patient towards tooth loss varies. Some patients are willing to undergo expensive treatments if they value the treatment as necessary, while some patients spend a minimal amount of expenditure to get their teeth replaced. Treatment duration is another factor which the patients insist. Some patients claim a quick replacement of their missing teeth while others are agreeable to undergo multiple procedures and discomfort to get the best possible treatment done. Also, aesthetic and functional expectations of the patient should be made clear before making the treatment plan for tooth replacements.

Clinical condition- Number of missing teeth that are to be replaced, condition of the neighbouring teeth and alveolar ridge are the clinical conditions that are to be considered.

Implant versus fixed partial denture?

Replacement of a missing tooth is agreeable for all clinicians, but whether to give implant prosthesis or a fixed partial denture (FPD) remains a matter of debate. The choice of prosthesis depends upon physical function, psychological impact, and function, treatment satisfaction, economic impact, treatment success and complications and methods to deal with withdrawal and loss to follow up.[8] There are specific indications for a FPD and an implant.

Implants have a longer rate of survival and serve better than a FPD. Also, they offer significant advantages of enhanced aesthetics and functional results by preserving the integrity of existing teeth.[9] Implant crowns are not susceptible to caries in caries-susceptible individuals. The disadvantages of implant therapy include that the patient has to undergo a surgical procedure, some cases may require ridge augmentation procedure before implant placement, implant removal in cases of poor prognosis of remaining teeth in full mouth rehabilitation, proximity to vital structures such as inferior alveolar nerve and maxillary sinus and higher costs. FPDs, however, can be used in patient with systemic health problems contraindicated for implant therapy. RPDs are generally contraindicated due to aspiration risks.[10]

A comparative study by Scurria and Lindhe on FPD and implant restorations with a follow up of 6 years concluded that implant restorations were better than FPD.[11,12] The failure rates for FPD were more after a period of 10-15 years.

Nowadays, immediate loading protocols are used with high predictability under specific clinical conditions.[13] For that reason, the patient does not have to stay edentulous for a longer period of time after implant placement. Placement of implants at the time of extraction significantly reduces the treatment time and patient morbidity. Studies have stated that the treatment outcomes with implants were regarded as economically superior when compared to FPD.[8] The teeth adjacent to FPD used as abutments or as retainers for RPD are at higher risk of complications such as tooth hypersensitivity after tooth preparation and the need for endodontic treatment than the teeth adjacent to implants.[14,15] Also, the gingival response to implants is also enhanced with implants along with an improved access for oral hygiene when compared to FPDs with subgingival finish lines. Single tooth replacements in younger individuals because of trauma or congenitally missing tooth, if treated by FPD would compromise the health of adjacent teeth.

With regards to aesthetics between FPD and implant restorations, the advent of newer prosthetic components and procedures, implant patients benefit from the more aesthetic outcomes. Epidemiological surveys comparing the number of patients undergone implant restorations and FPD or RPD, there has been a decline in patients receiving FPD and RPD as compared to implants.[16]

CONCLUSION

In summary, the treatment options may range from no replacement to a removable partial denture, fixed partial denture and to an implant restoration. Tooth replacement, is anytime, beneficial to the patient. However the decision on the treatment modality should be patient centered with clear explanation given to the patient regarding the various

treatment modalities and their respective benefits. Several factors such as better aesthetics, excellent integrity of neighbouring teeth and longer survival rates might favour an implant over a FPD. However, condition of edentulous site, systemic health problems and potential abutment teeth requiring restorations might favour FPD. Missing teeth replacements usually require a multidisciplinary approach for a correct treatment plan with referral to specialists such as orthodontists, periodontists, prosthodontists and endodontists.[17] Thus, it is the task of the clinician to make the patients aware of the potential problems of not replacing a missing tooth and to provide an appropriate treatment for the same.

References

1. Steele JG, Treasure E, Pitts NB, Morris J, Bradnock G. Total tooth loss in the United Kingdom in 1998 and implications for the future. *Br Dent J* 2000; 189: 598-603.
2. Battistuzzi P, Kayser A, Peer P. Tooth loss and remaining occlusion in a Dutch population. *J Oral Rehabil* 1987; 14: 541-547.
3. Meskin LH, Brown LJ. Prevalence and patterns of tooth loss in US employed adult and senior populations, 1985-88. *J Dent Educ* 1988; 52: 686-691
4. James A, Rivers. The Missing Mandibular First Molar: A Problem for to be Patient and the Dentist. Quintessence International" 10/1982. Number 10 October 1982
5. Kiliaridis S, Lyka I, Friede H, *et al*: Vertical position, rotation, and tipping of molars without antagonists. *Int J Prosthodont* 2000;13:480-486
6. Shillingburg, H, T,. Hobo, S, and Whitsetl, L, D. Fundamentals of Fixed Prosthodontics, ed. 2, Chicago, Quintessence Publishing Co., 1981.
7. Behrend. D, A, The mandibular posterior fixed partial denture, *J. Prosthet, Dent.* 37(6):622, 1977.
8. Scheuber S, Hicklin S, Bra¨gger U. Implants versus short-span fixed bridges: survival, complications, patients' benefits. A systematic review on economic aspects. *Clin. Oral Implants Res.* 23(Suppl. 6), 2012, 50-62
9. Marc Quirynen *et al.* Implant therapy: 40 years of experience. *Periodontology* 2000, Vol. 66, 2014, 7-12
10. Position statement. American college of Prosthodontists. Chicago 2016.
11. Scurria MS, Bader JD, Shugars DA. Meta-analysis of fixed partial denture survival: Prostheses and abutments. *J Prosthet Dent* 1998; 79; 459-464.
12. Lindh T. Gunne, TiUberg *A.* Molin M. A mefa-analysis tn' partial edentulism. *Clin Oral Implants Res t* 998;9:S0-90
13. De Bruyn H, Raes S, €Ostman P-O, Cosyn J. Immediate loading in partially and completely edentulous jaws.- a review of the literature with clinical guidelines. *Periodontol* 2000 2014: 66: 153-187.
14. Priest, G. (2011) Revisiting tooth preservation in prosthodontic therapy. *Journal of Prosthodontics* 20: 144-152.
15. Misch, C.E., Misch-Dietsh, F., Silc, J., Barboza, E., Cianciola, L.J. & Kazor, C. (2008) Posterior implant single-tooth replacement and status of adjacent teeth during a 10-year period: A retrospective report. *Journal of Periodontology* 79: 2378-2382.
16. Eklund, S.A. (2010) Trends in dental treatment 1992 to 2007. *Journal of the American Dental Association* 141: 391-399.
17. Malament KA. Prosthodontics: achieving quality esthetic dentistry and integrated comprehensive care. *J Am Dent Assoc* 2000; 131: 1742-1749.

How to cite this article:

Grishmi Niswade *et al* (2017) 'A missing molar- consequences and treatment options!', *International Journal of Current Advanced Research,* 06(08), pp. 5562-5564. DOI: http://dx.doi.org/10.24327/ijcar.2017.5564.0751

****