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RESEARCH ARTICLE

IS HAVING WISDOM TOOTH ALWAYS WISE.

Dr. Maya S. Indurkar[1] and Dr. Manjiree S. Awad[2].
1. HOD, Prof., and PG Guide GDC& Hopital Aurangabad.
2. PG student GDC& Hopital Aurangabad.

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Key words:-
Dental caries; third molar; periodontitis; root resorption.

Abstract

Background: Third molar that fail to attain functional position may be pathologic in addition to causing potential harm to adjacent second molars. Therefore, the decision to retain or remove asymptomatic impacted or non impacted third molars presents a significant challenge.
Aim: To evaluate influence of Third Molars on Pathologies of Adjacent Second Molars.
Materials and methods: In a retrospective cross- sectional study, a total of 100 CBCT were evaluated in the age group of 17 to 60 year. Radiographic status of M3s, presence of distal caries, external root resorption(ERR), alveolar bone loss(ABL) of A-M2s were assessed by CBCT. Prevalence of A-M2 pathologies and association between N-M3s and pathologies of A-M2s were analyzed.
Results: CBCTs from 100 patients were included in the present study. Among these patients, we observed retained (both impacted and nonimpacted M3s) 3rd molars cause more caries, ERR, ABL to A-M2s compared to the A-2Ms where 3 rd molars were absent. Mandibular M3s cause more ABL to A-2Ms compared to maxillary 3Ms otherwise caries and ERR do not show any significant difference. Maxillary and mandibular non impacted 3Ms compared to impacted 3Ms cause significant amount of alveolar bone loss to adjacent 2nd molars.
Conclusion: Presence of non impacted 3rd molars, even if they are asymptomatic, represents an important risk factor for periodontal health of adjacent 2nd molars. This finding should be considered during clinical decision making regarding retention or extraction of nonimpacted 3rd molars, especially when these teeth are non-functional or when their removal will not affect overall occlusal function.

Introduction:-

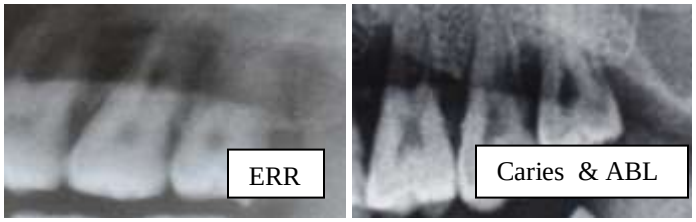
Third molars (M3s) that fail to attain functional position may be pathologic in addition to causing potential harm to adjacent second molars (A-M2s).[1] Therefore, extraction of impacted M3s (I-M3s) is the most common operation performed in dental clinics.[2] Several investigations have shown that a variety of A-M2 conditions, such as dental caries, root resorption, alveolar bone resorption, and cysts and tumors, may be associated with presence of I-M3s.[3-5] From a periodontal perspective, I-M3s should be removed before irreversible damage to dental or periodontal tissues of A-M2s can occur.[9] However, consensus has not been reached regarding extraction of I-M3s, particularly when they are asymptomatic and without pathology.[10-12] Patients prefer to retain their M3s when they are asymptomatic

Corresponding Author:- Maya S. Indurkar.
Address:- HOD, Prof., and PG Guide GDC& Hopital Aurangabad.

and disease free.[11,13] However, they should be advised about risk of M3 retention with time. At least one fourth of asymptomatic M3s might need to be removed prophylactically at a young age,14 although watchful monitoring may be a more prudent strategy.[15,16] Nevertheless, removal of M3s, whether I-M3 or non-impacted (N-M3), improves periodontal status of A-M2s, leading to less frequent local inflammatory periodontal disease and positively affecting overall periodontal health.[17,18] Therefore in this study, prevalence of A-M2 pathologies and association between N-M3s, I-M3s and pathologies of A-M2s is analyzed.

Materials And Methods:-

In this retrospective study, CBCTs were reviewed for 100 patients who underwent CBCT projection for various investigations, Minimum age for inclusion was 17 years because M3s commonly start to erupt at this age. We excluded patients with craniofacial anomalies (e.g., cleidocranial dysplasia or Down syndrome), maxillofacial cysts or tumors, trauma or fracture to the mandible/maxilla, less than two-thirds of M3 root formation, and/or incomplete records or poor quality OPGs and those undergoing orthodontic therapy were excluded. The following radiographic lesions at distal surface of M2s were recorded: 1) caries , 2) ERR, and 3) ABL



Results:-

Table 1:-Distal Pathologies of A-M2s in Quadrants With or Without M3s(400)

M3 status	Caries	ERR	ABL
Absent	10.6%	1%	33.3%
Retained	13.84%	1.23%	46.1%

Table 1 shows, retained (both impacted and nonimpacted M3s) 3rd molars cause more caries, ERR, ABL to A-M2s compared to the A-2Ms where 3 rd molars were absent.

Table 2:-Distal Pathologies of A-M2s in Quadrants with maxillary and mandibular M3s(325)

M3 status	Caries	ERR	ABL
Maxillary	12.8%	1.28%	43.5%
Mandibular	14.7%	1.18%	48.5%

This table shows that mandibular M3s cause more ABL to A-2Ms compared to maxillary 3Ms otherwise caries and ERR do not show any significant difference.

Table 4:-Influence of Presence of N-M3s on Prevalence of Distal Pathologies of A-M2s

M3 status	Caries	ERR	ABL
Maxillary			
Nonimpacted	12.8%	1.4%	45.6%
Impacted	12.5%	0%	41.25%
Mandibular			
Nonimpacted	15%	1.25%	48.75%
Impacted	14%	0%	44.4%

Table no. 3, shows that maxillary and mandibular non impacted 3Ms compared to impacted 3Ms cause significant amount of alveolar bone loss to adjacent 2nd molars.

Discussion:-

The present study investigates the association between presence of N-M3s & I-M3s and prevalence of caries, ERR, and ABL among A-M2s. As per table no.1 retained (both impacted and nonimpacted M3s) 3rd molars cause more caries, ERR, ABL to A-M2s compared to A-2Ms where 3rd molars were absent. Mandibular M3s cause more ABL i.e.48.5% to A-2Ms compared to maxillary 3Ms i.e. 43.5% whereas, caries and ERR do not show any significant difference (as in table 2). According to table no.3 maxillary and mandibular non impacted 3Ms (45.6% & 48.7%)

compared to impacted 3Ms (41.25% & 45.4% respectively) cause significant amount of alveolar bone loss to adjacent 2nd molars. These results are comparable with the study done by Zhi – Bang Li(2017)[19]. In his study when I-M3s were present, prevalence of A-M2 caries and ERR was 14.3% and 2.4%, respectively. Overall, 41.5% of M2s adjacent to I-M3s presented with ABL. Prevalence of distal caries, ERR, and ABL of A-M2s was higher in quadrants with M3s than in quadrants without M3s where maxillary and mandibular non impacted 3Ms (45.6% & 48.7%) compared to impacted 3Ms (41.25% & 45.4% respectively) cause significant amount of alveolar bone loss to adjacent 2nd molars. In present study when compared to maxillary N-3Ms, mandibular N- 3Ms cause more alveolar bone loss of A-2Ms .

Conclusion:-

In present study, presence of impacted 3rdmolars significantly increases risk of pathologies of adjacent 2nd molars. Presence of non impacted 3rd molars did not increase risk of pathologies like distal caries and ERR of adjacent 2nd molars but they significantly increases risk of alveolar bone resorptionof 2nd molars, thereby affecting periodontal health. Regular periodic clinical examinations and radiographs of 2nd and 3rd molars may prevent alveolar bone loss, caries and external root resorption and prophylactic removal of nonimpacted 3rd molars may be advisable in patients who are susceptible to periodontal disease and in whom opposing 3rd molar is missing.

References:-

1. Lieblich SE, Kleiman MA, Zak MJ. Parameters of care: Clinical practice. Guidelines for oral and maxillofacial surgery. AAOMS ParCare 2012 (version 5.0). J Oral MaxillofacSurg 2012;70(Suppl. 3):e50-e71.
2. Almendros-Marque´s N, Alaejos-Algarra E, Quinteros- Borgarello M, Berini-Ayte´s L, Gay-Escoda C. Factors influencing the prophylactic removal of asymptomatic impacted lower third molars. Int J Oral MaxillofacSurg 2008;37:29-35.
3. Chu FC, Li TK, Lui VK, Newsome PR, Chow RL, Cheung LK. Prevalence of impacted teeth and associated pathologies – A radiographic study of the Hong Kong Chinese population. Hong KongMed J 2003;9:158-163.
4. Nunn ME, Fish MD, Garcia RI, et al. Retained asymptomatic third molars and risk for second molar pathology. J Dent Res 2013;92:1095-1099.
5. Santosh P. Impacted mandibular third molars: Review of literature and a proposal of a combined clinical and radiological classification. Ann Med Health Sci Res 2015;5:229-234.
6. McArdle LW, McDonald F, Jones J. Distal cervical caries in the mandibular second molar: An indication for the prophylactic removal of third molar teeth? Update. Br J Oral MaxillofacSurg 2014;52:185-189.
7. Bouloux GF, Busaidy KF, Beirne OR, Chuang SK, Dodson TB. What is the risk of future extraction of asymptomatic third molars? A systematic review. J Oral MaxillofacSurg 2015;73:806-811.
8. Mercier P, Precious D. Risks and benefits of removal of impacted third molars.A critical review of the literature. Int J Oral MaxillofacSurg 1992;21:17-27.
9. McCoy JM. Complications of retention: Pathology associated with retained third molars. Atlas Oral MaxillofacSurgClin North Am 2012;20:177-195.
10. Kandasamy S, Rinchuse DJ, Rinchuse DJ. The wisdom behind third molar extractions. Aust Dent J 2009;54: 284-292.
11. Dodson TB. The management of the asymptomatic, disease-free wisdom tooth: Removal versus retention. Atlas Oral MaxillofacSurgClin North Am 2012;20:169-176.
12. McNamara Z, Findlay G, O'Rourke P, Batstone M. Removal versus retention of asymptomatic third molars in mandibular angle fractures: A randomized controlled trial. Int J Oral MaxillofacSurg 2016;45:571-574.
13. Renton T, Al-Haboubi M, Pau A, Shepherd J, Gallagher JE. What has been the United Kingdom's experience with retention of third molars? J Oral MaxillofacSurg 2012;70(Suppl. 1)S48-S57.
14. Venta¨ I. How often do asymptomatic, disease-free third molars need to be removed? J Oral MaxillofacSurg 2012;70(Suppl. 1)S41-S47.
15. Mettes TD, Ghaeminia H, Nienhuijs ME, Perry J, van der Sanden WJ, Plasschaert A. Surgical removal versus retention for the management of asymptomatic impacted wisdom teeth. Cochrane Database Syst Rev 2012;6:CD003879 10.1002/14651858.
16. Rafetto LK. Managing impacted third molars. Oral MaxillofacSurgClin North Am 2015;27:363-371. J Periodontol • May 2017 Li, Qu, Zhou, Tian, Chen 455
17. Blakey GH, Parker DW, Hull DJ, et al. Impact of removal of asymptomatic third molars on periodontal pathology. J Oral MaxillofacSurg 2009;67:245-250.
18. Dicus C, Blakey GH, Faulk-Eggleston J, et al. Second molar periodontal inflammatory disease after third molar removal in young adults. J Oral MaxillofacSurg 2010;68:3000-3006.
19. Zhi-Bang Li,† Hong-Lei Qu,† Li-Na Zhou,†Bei-Min Tian,† and Fa-Ming Chen Influence of Non-Impacted Third Molars on Pathologies of Adjacent Second Molars: A Retrospective Study J Periodontol 2017;88:450-456.