

Original Research

Knowledge, attitude and perception on endo-perio lesions in practicing dentists- A qualitative research study

Dr Ankita Khandelwal¹, Dr. Jayesh Billore², Dr. Brajesh Gupta³, Dr Shraddha Jaroli⁴, Dr. Nitin Agrawal⁵

1. Senior Lecturer, Department of Conservative Dentistry and Endodontics, Index Institute of Dental Sciences, Indore, Madhya Pradesh
2. Senior Lecturer, Department of Conservative Dentistry and Endodontics, College of Dental Science and Hospital, Indore, Madhya Pradesh
3. Reader, Department of Prosthodontics, Sri Sai College of Dental Surgery, Vikarabad
4. Senior Lecturer, Department of Conservative Dentistry and Endodontics, Modern Dental College, Indore, Madhya Pradesh
5. Senior Lecturer, Department of Periodontics, Modern Dental College Indore, Madhya Pradesh

ABSTRACT:

Aim: The purpose of the present research was to assess the knowledge as well as to analyze the perception skills regarding the management of Endo- Perio lesions (EPL) in dental practioners. **Methodology:** A descriptive survey study was conducted amongst 63 dental practioners. The dental surgeons were assessed regarding their skills as well as their knowledge about handling endo-perio lesions and the problems they face while handling combined lesions. **Results:** Only 31% of dental professionals especially specialists are capable to manage EPL cases. However, 92% of participants felt the need to add more study material in the undergraduate curriculum regarding management of EPL. **Conclusion:** Only by careful diagnosis in Endo-perio lesions; can the most effective therapy method be selected and the success rate increased. EPL can be a challenge to doctors as interdisciplinary collaboration is needed in order to obtain a favourable outcome.

Keywords Endo-perio lesion, periodontal disease, diagnosis, treatment.

Received: 23/09/2020

Modified: 18/10/2020

Accepted: 20/10/2020

Corresponding Author: Dr Ankita Khandelwal, Senior Lecturer, Department of Conservative Dentistry and Endodontics, Index Institute of Dental Sciences, Indore, Madhya Pradesh

This article may be cited as: Khandelwal A, Billore J, Gupta B, Jaroli S, Agrawal N. Knowledge, attitude and perception on endo-perio lesions in practicing dentists- A qualitative research study. J Adv Med Dent Scie Res 2020;8(11):31-34.

INTRODUCTION

Endodontic treatment is a very frequent and essential part of dental services applied for attending patients to dental clinics. The well performed endodontic treatment based upon skillful as well as highly educated and updated dentists will result in higher success rates. Two most common conditions that can independently lead to tooth mortality are periodontal and pulpal diseases. To maintain the natural dentition and also to restore the lost periodontium are the goal of endodontic and periodontal therapy.

Simring and Goldberg, in 1964, first described the relationship between pulpal and periodontal diseases. Several means of communication between the pulp and periodontal complex. To maintain the natural

dentition and also to restore the lost periodontium are the goal of endodontic and periodontal therapy. Tissues of dental pulp and periodontium are interlinked from the embryonic stage. The dental papilla (precursor of dental pulp) and dental sac (precursor of PDL) are of a common mesodermal origin. At the late bell stage, epithelial root sheath separates the dental papilla and dental follicle except at the base the future apical foramen. Therefore, it is natural to expect that any part of periodontium can get affected by pulpal inflammation and vice versa.¹

The most important factor in the treatment of perio-endo lesions is a correct diagnosis. This is achieved by careful history taking, examination and the use of special tests.² Specific things to look for in the history

include past disease, trauma and pain. In clinical examination check the dental and periodontal status. Sensibility and vitality testing should be carried out. Clinical tests are imperative for obtaining correct diagnosis and differentiating between endodontic and periodontal disease. The extraoral and intraoral tissues are examined for the presence of any abnormality or disease.

Before the commencement of any kind of advanced restorative work to treat a perio-endo lesion, extraction of the tooth should be considered as an alternative. The prognosis of the tooth should be considered carefully. Consideration includes whether there is a functional need for the tooth or if it is possible to provide an adequate root filling (i.e. negotiable canals are present). Other important considerations are whether the tooth is restorable after the lesion has been treated and patient suitability for lengthy, costly, invasive treatment with a need for high patient motivation. If any of these factors are deemed negative extraction is the treatment of choice.³

Diagnosis of primary endodontic disease and primary periodontal disease usually present no clinical difficulty. In primary endodontic disease the pulp is infected and nonvital. In primary periodontal disease the pulp is vital and responsive to testing. However, primary endodontic disease with secondary periodontal involvement, primary periodontal disease with secondary endodontic involvement, or true combined diseases are clinically and radiographically very similar. If a lesion is diagnosed and treated as primarily endodontic disease due to lack of evidence of plaque-induced periodontitis, and there is soft tissue healing on clinical probing and bony healing on a recall radiograph, a valid retrospective diagnosis can then be made. The degree of healing that has taken place following root canal treatment will determine the retrospective classification. In the absence of adequate healing, further periodontal treatment is indicated. The prognosis and treatment of each endodontic-periodontal disease type varies. Primary endodontic disease should only be treated by endodontic therapy and has a good prognosis. Primary periodontal disease should only be treated by periodontal therapy.⁴

True-combined lesions are treated initially as for primary endodontic lesion with secondary periodontal involvement. Periodontal surgical procedures are almost always called for. The prognosis of a true-combined perio-endo lesion is often poor or even hopeless, especially when periodontal lesions are chronic with extensive loss of attachment.⁵ Root amputation, hemisection or separation may allow the root configuration to be changed sufficiently for part of the root structure to be saved. Prior to surgery, palliative periodontal therapy should be completed and root canal treatment carried out on the roots to be saved.⁶ The prognosis of an affected tooth can also be improved by increasingly bone support which can be

achieved by bone grafting and guided tissue regeneration.⁷ This is due to the most critical determinant of prognosis being a loss of periodontal support.⁸ These advanced treatment plans are based on response to conventional periodontal and endodontic treatment over an extended time period.⁹ Primary periodontal disease with secondary endodontic involvement and true combined endodontic-periodontal diseases require both endodontic and periodontal therapies. It has been demonstrated that intrapulpal infection tends to promote epithelial downgrowth along a denuded dentin surface.¹⁰

The ideal therapeutic sequence for the true combined lesion is:⁴

1. Root canal therapy;
2. Review after 2 to 3 months;
3. If lesion is not showing signs of resolving (clinically and radiographically) perform appropriate periodontal therapy;
4. Review 2 to 3 months after periodontal therapy and re-evaluate radiographically.

Where bone loss is terminal around one root it may be possible to perform a hemisection for mandibular molars or a root amputation for maxillary molars. If either of these procedures is to be contemplated, endodontic therapy should ideally be completed before the surgical resection. The root that is to be removed may not necessarily require endodontics, but the remaining canals should be obturated and sealed at their most coronal aspect to isolate them from the infected canal before amputation or resection of the diseased root.

AIM OF THE STUDY

The purpose of the present research was to assess the knowledge as well as to analyze the perception skills and attitude regarding the management of Endo-Perio lesions in dental practitioners.

METHODOLOGY

A descriptive survey study was conducted amongst 63 dental practitioners. There were 27 female and 36 male dentists participating in the survey. Around 34 of them had completed their masters and of which around 10 were Endodontists and 9 were Periodontists. The dental surgeons were assessed regarding their skills as well as their knowledge about handling endo-perio lesions and the problems they face while handling combined lesions. The questionnaire survey (Table 1) consisted of 8 questions in English language and was in a binary format with answers having in either 'Yes' or 'No' replies with a few questions in open ended format, so that descriptive answers can be acknowledged from the participants. The survey was emailed to the dentists and the replies were recorded in MS Excel spreadsheets. The data recorded was subjected to descriptive statistical analysis using latest SPSS.

RESULTS

In our study we found out that, around 66% dental professionals are reluctant to handle complex EPL cases and 78% refer those cases to the specialists. (Table 2) Only 31% of dental professionals especially specialists are capable to manage these cases. Patients also are not motivated enough (53%) to undergo lengthy treatment procedures rather they prefer to extract the teeth rather than undergo proper EPL treatment. Unfortunately, only 12% of the participants were aware of carrying out procedures like hemisection and other EPL surgical procedures. This survey also recorded that around 92% of participants felt the need to add more study material in the undergraduate curriculum regarding management of EPL.

DISCUSSION

The prognosis of primary periodontal disease with secondary endodontic involvement and true combined diseases depends primarily upon the severity of the periodontal disease and the response to periodontal treatment. In general, assuming the endodontic therapy is adequate, what is of endodontic origin will heal. Thus, the prognosis of combined diseases rests with the efficacy of periodontal therapy.¹¹

In most cases the root canal therapy should be performed before the periodontal treatment, because periodontal lesions sometimes resolve following successful endodontics but the reverse is rarely true. Furthermore, performing periodontal treatment alone in the presence of a true combined lesion may lead to

initial healing of the periodontal pocket, but it will break down rapidly if the pulpal source of infection is not removed. Indeed, if repeated debridement of a localized periodontal pocket fails to remove suppuration then pulpal necrosis should always be suspected and investigated before embarking on periodontal surgery.⁴

Primary endodontic lesions usually heal after a correct endodontic treatment. The prognosis is generally a good one especially if during cleaning and shaping of the root canals, the irrigation protocol was thoroughly performed.¹² Primary periodontal lesions only require periodontal therapy. Treatment options include etiologic therapy by eliminating all factors which can induce or promote epithelial downgrowth followed by surgical periodontics.¹³

True combined lesions demand both endodontic and periodontal regenerative procedures. Without this interdisciplinary treatment method, there will be no satisfactory prognosis, with the success rate dropping to 27-37% as the study conducted by Oh et al reported.¹⁴ As a first step, true combined lesions should be addressed with an endodontic treatment. Before any periodontal surgical procedure, etiologic therapy should be initiated as the prognostic of these combined lesions is closely related to the efficiency of the periodontal management.¹⁵ Prognosis of an affected tooth can also be improved by increasing bone support around the denuded cement surface, achieved through bone grafting and guided tissue regeneration (GTR).

Table 1- Questionnaire for the present study

S. No.	Questions
1	Do you handle endo-perio lesions in your clinical practice?
2	Do you refer these cases to specialists?
3	Are intra-canal medicaments helpful in Endo-perio lesions?
4	Do you have adequate knowledge and expertise to handle such cases?
5	Can you perform hemisection/ root amputation / complex endodontic and periodontal surgical procedures?
6	Which procedure needs to be carried out first (root canal therapy/ periodontal treatment) in these endo-perio lesions?
7	Are patients in your clinical practice, motivated enough to go through complex procedures to get these types of lesions treated?
8	Do you think that undergraduate curriculum should include more study material on handling endo-perio lesions?

Table 2- Data recorded from survey participants

Question No.	Responses	
	Yes	No
1	34%	66%
2	78%	22%
3	83%	17%
4	31%	69%
5	12%	88%
6	76% participants responded that endodontic therapy needs to carried out first	
7	47%	53%
8	92%	8%

These regenerative treatment techniques, performed by using the operating microscope, have reported a success rate of 77.5% as Kim et al established.¹⁶

In our study, we noticed that many dental professionals felt endo-perio lesions problematic and usually refer them to specialists rather than handling. We also noticed that dental surgeons are hesitant to handle such cases as it required complex treatment options as well as longer treatment time, which the patients might not be in favor of. A lack of experience was evident amongst the participants except endodontists and periodontists.

CONCLUSION

A perio-endo lesion can have a varied pathogenesis which ranges from quite simple to relatively complex. The knowledge of these disease processes is essential in coming to correct diagnosis. This enables the construction of a suitable treatment plan where unnecessary, prolonged or even detrimental treatment is avoided.

REFERENCES

1. Sistla KP, Raghava KV, Narayan SJ, Yadalam U, Bose A, Roy PP. Endo-perio continuum: A review from cause to cure. *J Adv Clin Res Insights* 2018;5:188-191.
2. Whyman RA. Endodontic-periodontic lesions. Part-1; prevalence, aetiology and diagnosis. *New Zealand Dental Journal* 1988;84:74-77.
3. Stock CJR, Nehammer CF. Endodontics in practice. *British Dental Journal* 1990: 62-66.
4. Iain LC Chapple, Philip J Lumely. The periodontal endodontic interface. *Dental update* 1999;26:331-341.
5. Christie WH, Holthuis AF. The endo-perio problem in dental practice: diagnosis and prognosis. *Journal of the American Dental Association* 1990;56:1005-1011.
6. Whyman RA. Endodontic-periodontic lesions. Part-2; management. *New Zealand Dental Journal* 1988;85:109-111.
7. Chuen Chyi Tseng, Wei Meei Harn, Yea Huey Melody Chen et al. A new approach to the treatment of true-combined endodontic - periodontic lesions by the guided tissue regeneration technique. *Journal of Endodontology* 1996;22:693-696.
8. Mhairi R Walker. The pathogenesis and treatment of endo-perio lesions. *Continuing Professional Development* 2001;2(3):91-95.
9. Zubery Y, Kozlovsky A. Two approaches to the treatment of true combined periodontal-endodontal lesions. *Journal of Endodontology* 1993;19:414-416.
10. Blomlof L, Lindskog S, Hammarstrom L. Influence of pulpal treatments on cell and tissue reactions in the marginal periodontium. *Journal of Periodontology* 1988;59: 577-583.
11. Jansson L, Ehnevid H, Blomlof L, Weintraub A et al. Endodontic pathogens in periodontal disease augmentation. *Journal of Clinical Periodontology* 1995;22:598-602.
12. P Carrotte. Endodontics: Part 9 Calcium hydroxide, root resorption, endo-perio lesions. *Brit Dent J.* 2004;197:735-43.
13. Miao H, Chen M, Otgonbayar T, et al. Papillary reconstruction and guided tissue regeneration for combined periodontal-endodontic lesions caused by palatogingival groove and additional root: a case report. *Clin Case Report.* 2015;3:1042-1049.
14. Gupta S, Tewari S, Mittal S. Effect of the time lapse between endodontic and periodontal therapies on the healing of concurrent endodontic-periodontal lesions without communication: a prospective randomized clinical trial. *J Endod.* 2015;41:785-790.
15. Nagaveni NB, Kumari KN, Poornima P, Reddy V. Management of an endo-perio lesion in an immature tooth using autologous platelet-rich fibrin: a case report. *J Indian Soc PedodPrev Dent.* 2015;33:69-73.
16. Kim E, Song JS, Jung IY, Lee SJ, Kim S. Prospective clinical study evaluating endodontic microsurgery outcomes for cases with lesions of endodontic origin compared with cases with lesions of combined periodontal-endodontic origin. *J Endod.* 2008;5(34):546-51.