

ENDO-PERIO LESION: A CASE REPORT

Venkatesham Sirgamalla¹, Vidya Sagar S², Rajababu P³, Vikram Reddy G⁴

¹Post Graduate, ²Professor, ³Professor & Head, ⁴Reader, Department of Periodontics and Implantology, Kamineni Institute of Dental Sciences, Narketpally, Nalgonda, Telangana, India.

ABSTRACT

The pulp and periodontium have embryonic, anatomic and functional inter- relationships. The simultaneous existence of pulpal problems and inflammatory periodontal disease can complicate diagnosis and treatment planning. This case report evaluates the efficacy of G-Bone graft in the management of vertical bone loss associated with an endo-perio lesion in a left mandibular first molar and second molar. A 40 year-old male patient with an endo-perio lesion in the left mandibular first and second molars was initially treated with endodontic therapy. Following the endodontic treatment, the defect was treated using G-Bone graft. At the end of 6 months, there was a gain in the clinical attachment level and reduction in probing depth. Radiographic evidence showed that there was a significant bony fill.

KEYWORDS: Endo - perio lesion; Vertical bone loss; G – Bone graft.

INTRODUCTION

The actual relationship between periodontal and pulpal disease was first described by Simring and Goldberg in 1964 [1]. Endo perio lesion due to inflammatory products found in varying degrees in both the periodontium and the pulpal tissues. The Endodontium and Periodontium are closely related and diseases of one tissue may lead to the involvement of the other.

Periodontic-endodontic lesions are complex in nature and have varied pathogenesis. Treatment, decision making and prognosis depends primarily on the diagnosis of the specific disease. To have the best prognosis, clinician must refer the case to various areas of specialization, to perform restorative, endodontic and periodontal therapy either singly or in combination.

Classification

According to Simon, Glick and Frank in 1972 classified as [2]:

- Primary endodontic lesion
- Primary periodontal lesion
- Primary endodontic lesion with secondary periodontal involvement
- Primary periodontal lesion with secondary endodon-

tic involvement

- True combined lesion

Prognosis of Teeth with Endo-Perio Lesions

Primary endodontic lesions: Healing of primary endodontic lesions usually take place after root canal therapy. Presence of microorganisms in the root canal influences the outcome of therapy [4]. With a proper focus on control of infection, a good prognosis is expected with the treatment [3].

Primary endodontic with secondary periodontal lesions

The prognosis of such lesions depends principally on the severity of periodontal involvement. If the endodontic treatment is adequate, the prognosis depends on the severity of the marginal periodontal damage and the efficacy of periodontal treatment [4].

Primary periodontal secondary endodontic lesion and true

Combined lesions: Efficacy of periodontal therapy usually determines the prognosis of combined lesions. A poor or even hopeless prognosis is expected in chronic and extensive periodontal diseases. A part of the tooth or root structure can be saved through hemi section or bicuspidization, root amputation. However, various factors such as tooth anatomy, function, restorability, root filling, bone support and patient's compliance should be considered [3]. An improved prognosis can also be achieved by increasing the bone support of the affected tooth by the means of bone grafting which



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Corresponding author: Venkatesham Sirgamalla, Post Graduate Student, Department of Periodontics and Implantology, Kamineni Institute of Dental Sciences, Narketpally, Nalgonda, Telangana, India. Email: venkatesh.sirgamalla@gmail.com

consists of hydroxy apatite and collagen. These regenerative procedures have reported to have a success rate 77.5% in the treatment of combined lesions (Parolia *et al.* 2013) [3]. On the contrary, the success rate ranges from 27% to 37% without regenerative procedures. Besides, patient-specific, defect-specific, and healing factors should also be considered at each level while determining the prognosis [8].

CASE REPORT

A 40 year old male patient came to the department of periodontics with a chief complaint of pain in lower left back tooth region since 3 months. Patient is systemically healthy. On intra oral examination carious tooth, Supragingival calculus, and Deep periodontal pockets in relation to 36, 37 with Grade II mobility in relation to 37 and Grade I mobility in relation to 36.

Radiographic findings showed radiolucency involving the proximal surfaces of the tooth in relation to 36, 37 also radiolucency was seen on the distal root of 37.

Diagnosis: Primary endodontic with secondary periodontal lesion in relation to 36, 37 (According to Simon *et al.*, 1972).

Decision making and treatment plan

Decision making: Carious Involvement should first be treated with endodontic therapy (Rotstein *et al.*, 2002) [3], after the phase I. The evaluation of treatment results after 1 month and further periodontal therapy should be considered (Parolia *et al.*, 2013) [3].

Treatment Plan

Phase I: Scaling and root planing; Oral hygiene instructions.

Evaluation of Phase I after 1 week.

Phase II: Biomechanical preparation and obturation in relation to 36, 37. Open flap debridement with attempted regeneration for bone loss in relation to 36, 37

Phase III: Prosthetic crowns in relation to 36, 37

Phase IV: Maintenance and recall

In the present case report, the presence of carious lesions with deep periodontal pockets and mobility of teeth in relation to 36, 37 (Fig: 1) so, periodontal therapy was planned. Phase 1 therapy was instituted. Patient was recalled after 1 week for evaluation of oral hygiene. Endodontic therapy was done for 36 and 37. After 3 weeks, periodontal pocket was reassessed. Deep periodontal pocket of more than 5mm was present in relation to 36, 37. Periodontal flap surgery was planned in relation to 36, 37. After giving adequate amount of local anaesthesia a full thickness mucoperiosteal flap was raised by giving crevicular incisions in relation to 36 and 37 and one vertical releasing incision

given at the distal line angle of the second pre molar which extending in to the alveolar mucosa (fig: 3). The area was thoroughly debrided with Gracey curettes. G-Bone graft was placed in relation to 36, 37 (fig: 4). Simple interrupted silk sutures were placed (fig 5) Post-operative medications and instructions were given and patient was recalled after 1 week for suture removal.

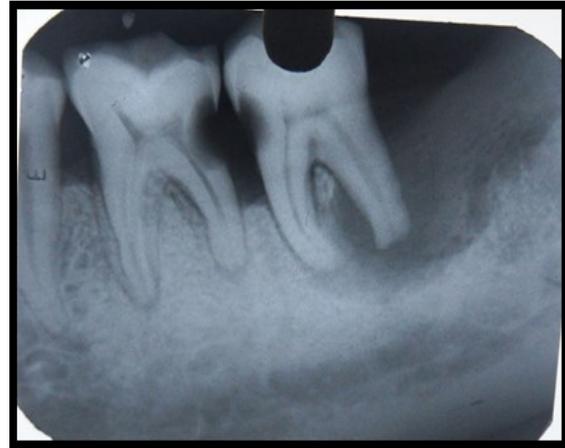


Fig 1. Pre-operative IOPA



Fig 2. Pre-operative view



Fig 3. Flap reflection in relation to 36, 37



Fig 4. Bone graft placed in relation to 36, 37



Fig 5. Sutures placed in relation to 36, 37



Fig 6. Post-operative 6 months



Fig 7. Post-operative 6 months

Clinical and radiological Evaluation: The patient was recalled after one month of flap surgery for re-evaluation. A good oral hygiene of the patient was observed. There was absence of bleeding on probing in relation to 36. Resolution of the inflammation and a reduction in probing pocket depth was observed (fig 7). IOPA taken postoperative showed bone fill in relation to 36, 37.

DISCUSSION

The diagnosis and prognosis of the tooth having endo-perio lesions presents a challenge to the clinicians. Correct diagnosis is important to determine the treatment and long term prognosis. However, treating a complex endodontic periodontal lesion is still one of the most common challenges in today's clinical practice. The simultaneous existence of pulpal and periodontal tissue destruction can complicate the diagnosis and subsequently affect the prognosis of the involved teeth [6]. This highlights the importance of following a critical diagnostic strategy to ensure a correct treatment plan. It also requires thorough understanding of wound healing process involving both complex tissues. Treatment of endo-perio lesion requires both endodontic treatment and periodontal regenerative treatment. The treatment strategy is to first focus on debridement and disinfection of the root canal system followed by an observation period. The goal of periodontal surgery is to remove all necrotic tissues from the surgical site and facilitate the regeneration of hard and soft tissue along with the formation of new attachment apparatus [7]. However, lesions which are not true combined lesions, little or no improvement would be seen with the periodontal perspective after endodontic treatment, leaving a very poor and often hopeless prognosis. But with the advent of new regenerative materials, however, successful periodontal treatment of such lesions has been possible. Generally, in a case of combined endo-perio lesion, an adequate endodontic therapy would result in healing of the endodontic component and the prognosis would finally depend on the efficacy of periodontal repair/regeneration initiated by either of the treatment procedures. In the reported case the established diagnosis was of primary endodontic with secondary periodontal involvement. Hence, endodontic therapy was done and followed by periodontal surgery. G- Bone graft which consists of Hydroxy apatite and collagen was used. Studies have shown that HA particles did not elicit an inflammatory response and that they provided a scaffold for the new bone to grow. Endodontic treatment was administered followed by periodontal surgery after 1 month. 6 month follow up of the patient revealed resolution of the symptoms and improved clinical and radiographic findings [5].

CONCLUSION

Endo perio lesion has a complex pathogenesis and requires great skill to identify and treat it. Hence, cooper-

ation between different disciplines that includes periodontology, endodontic and Prosthodontics is required to effectively treat the lesion. A better treatment plan leads to a better result as seen in this case report.

Conflict of interest: Nil declared

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