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REVIEW ARTICLE

COMBATING CHALLENGES TO MANAGE ENDODONTIC PAIN IN DENTAL PRACTICE

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Abstract

One of the most challenging and difficult task in clinical practice of an endodontist is to manage pain. Advancements in understanding of pain physiology and pharmacology have provided a key upon which quick decisions can be made for treatment of any endodontic case. Despite advancement in technology, patients perception and apprehension is till date considered as a standard to acknowledge the expertise of an endodontist when undergoing a routine endodontic therapy. The current article aims to reflect effective strategies of management of endodontic pain in pre-operative, operative and postoperative situations. In lieu of clinical relevance of this topic in day to day life of an endodontist the topic was also addressed as a scientific paper presentation in a national conference to welcome thoughts of colleagues at a broader platform.

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Introduction:-

Over years management of endodontic pain is one of the most challenging jobs in the life of any endodontist. Challenges in this area could be a source to frustration to an endodontist performing the treatment and even more for an otherwise anxious patient as patient reports in pain and psychologically expects pain while undergoing this procedure. The situation worsens if the pain lingers on postoperatively. Pain is defined as an unpleasant sensory and emotional experience associated with acute or peripheral tissue damage. Endodontic treatment therefore demands to understand the pathophysiology of pain system and control preoperative pain, intra operative pain and postoperative pain and built effective practical strategies to its management. This article aims to bring forth easy and a step wise guided approach in effective management of endodontic pain.

Understanding Pain

From the perspective of dental pain emergency, it is prior important to understand whether pain is originating from tooth or is referred from any tissue. Table attached lays out the differential diagnosis of pain. (Table 1)

Table 1:- Table depicting differential diagnosis of pain.

Differential diagnosis of Pain	
Odontogenic Pain	Non-Odontogenic Pain
1. Dentinal hypersensitivity	Musculoskeletal:Myofacial;TMD
2. Reversible pulpitis	Neuropathic:Trigeminal neuralgia
3. Irreversible pulpitis	Neurovascular:Migraine
4. Acute apical periodontitis	Inflammatory:Allergic sinusitis
5. Acute apical abscess (Pain may arise from	Systemic disorders:Cardiac pain,Herpes

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suspected tooth or referred from another tooth)	zoster,Sickle cell anemia,Neoplastic diseases
	Psychogenic origin

Management Strategies

Preoperative Pain Control

Key to manage this is to know and understand your patients' fear'. Patients demanding endodontic care could be experiencing some kind of pain and would be in anxious state of mind after listening to experience of anyone known who has undergone the treatment. Any individual is judged with his thoughts (affects how one acts or feels), emotions (whatever one feels affects ones thinking) and behavior (whatever one does affects how one thinks or feels) .These together contribute to patient's anxiety/apprehension. Best strategies to manage the pre-operative pain begins with

Being a good and patient listener to your patient.

Addressing to chief complaint which should be directed to nature of discomfort.

Next important and crucial step is to take complete history(dental and medical) : This not only helps in ruling out underlying problems which patient was/is suffering from but helps in assessing patients self motivation for treatment as it affects the overall treatment plan.

Look for if needed occlusal adjustments: This is a highly predictable and simple strategy to prevent pain or give relief when in handling an endodontic emergency. (Rosenberg P et al., 1998)

Next important measure remains to rule out whether pain is odontogenic or non odontogenic in origin. (Seltzer et al.,2002)This can be simply ruled out by having an understanding of features of non odontogenic dental pain which are depicted in table 2

Table-2:- Table denoting features of non-odontogenic dental pain.

Features of non-odontogenic dental pain
1. No apparent etiologic factors for odontogenic pain(no caries.leaky restoration,trauma,fractues,etc)
2. Pain not consistently relieved by local anaesthesia
3. Bilateral/multiple teeth painful
4. Pain can be chronic and not responsive to dental treatment
5. Diagnosis-specific pain concurrent with headache
6. Diagnosis-specific pain:burning,stabbing,electrical shooting,dull ache(increased by emotional stress,physical excercise,head position,etc)
7. Diagnosis-specific:palpation of trigger points or muscles can increase pain

Pain Control While Rendering Root Canal Procedure

Structured approach to manage an endodontic pain not just provides an effective treatment but also ensures an increased clinical efficiency. Diagnosing the cause and type of dental pain is the primitive step in this ground .It is also important to carefully visualize the tooth for any craze line, caries, existing restoration, fracture, dentin exposure, any swelling or sinus tract /fistula. Insurance of status of pulp is next important parameter in this aspect.(T.Nivethithan et a.,207)l Pulp vitality test should be performed to rule out the pulp involvement. Cold test is most predictable test among any other pulp vitality test. Similarly, status of periapical tissues should be assessed by percussion/palpation test indicating the periapical inflammatory changes or infection. Radiographs are an adjunct to these clinical findings. Pre-operative radiographs play a crucial role not just ruling out the disease process but at times assessing the outcome of the treatment. Pre-operative radiographs taken with a cone shift would rule out chances of any missed root canal, underlying pathosis or any communication between pulp and periodontium. It is then important to rule out for any combined endo perio lesion.(Paul.A.Rosenberg.;2002)

Use of Local anesthesia: In most of acute situations administering regional block for local anesthesia becomes a mandate. Supplemental anesthesia should be administered when profound anesthesia cannot be achieved alone with the regional nerve block.(Hargreaves Keiser K.;2002)

Treatment Procedures

The biologic reason why pulpectomy or pulpotomy relieves pain is because of reducing tissue levels of inflammatory mediators and elevated interstitial tissue pressure which stimulates the peripheral terminals of nociceptors. When only coronal pulp is affected the pulpotomy procedures should be given a choice of treatment to reduce the acute dental pain. Furthermore use of bioceramic materials should be opted for the treatment procedure. Proper debridement of the infected root canals combined with incision and drainage in case of persisting pus do help in reducing pain. In cases of irreversible pulpitis or pulp necrosis pulpectomy should be performed. When performing a root canal treatment it is of utmost importance to emphasize that one should have sound knowledge of the tooth anatomy, ensure a proper working length while cleaning and shaping the root canals, do copious irrigation while filing the root canals in order to disinfect them."Flare ups" are more likely with necrotic pulps which can be reduced with use of intra canal medicaments. It is also seen that 2 visit endodontics significantly reduces the level of inter appointment flare up conditions.(JariwalaSP et al.;2002)

Another important reason of endodontic pain could be over instrumentation. It is must to avoid apical irritation with instruments which can be easily managed by re-ensuring the working length during recapitulation while doing biomechanical preparation of the infected root canals. Apical extrusion of filling material and extrusion of the endodontic sealer could also be a reason for post endodontic pain. The post endodontic pain can be substantially reduced not just by addressing to the cause but also by rendering the proper dental treatment.(De Leeuz R et al.;2013)

Drugs act as an adjunct to the treatment. Choosing the right non steroidal anti inflammatory drugs (considering the patient's medical history and any known allergy) aids to relieve pain. (Juni P et al.;2002)Most commonly drugs employed in this regards are Ibuprofen, combination of Ibuprofen and Acetaminophen, Ketorolac, and also Tramadol in certain severe painful conditions. In progressive and persisting infections antibiotics are supplemented to localize the spread of infection. In the range of broad spectrum antibiotics, Penicillin /Amoxicillin remain the most commonly employed drug. Other alternatives include combination of amoxicillin and clavulanic acid or Clindamycin. Drug doze and time should be well monitored. Patient tends to respond after 48 hrs of drug administration but it should be instructed to complete the regimen to prevent rebound effect of active infection. A close watch on patients administered with drugs rules out the chances of worsening of clinical symptoms or any drug allergy.

Management of Post Endodontic Pain

Follow the 3 "R" approach: Recall, Retreat and Reassure to manage the post endodontic pain. It is always good to keep the patient in recall which not just helps in knowing the dental status of the patient but also shows a concern of a doctor towards his/her patient. It is a always wise to keep a follow up radiographs after rendering endodontic treatment at regular intervals of 1month,3month 6 month and a year to check the regression of periapical radiolucency which was evident in pre-operative radiograph.

If there is any sign or symptom persisting in the recall visit it is again important to 'retreat' the treated area or retreat the endodontic canals by removing the obturation. Rule out the possible missed canal, irrigate and recapitulate the area and also ensure that the canal is dry. (Hakan Arslan et al.;2016) Patient responds well with intracanal medicament which is left in the canal for at least 7 days before re-filling the treated root canals. Knowing the patient's psychology it is very important to 'reassure' the patient that soon he/she would be comfortable . Encouraging words help in motivating the patient and thereby affects the treatment outcome.

Conclusion:-

Endodontic pain has various dimensions. The enigma of endodontic pain has always brought many endodontist in quest to handle it as one of most unavoidable challenge in routine practice. Things worsen as every patient brings a different clinical picture. Management of endodontic pain and the methods to prevent it has wide variations. There should be a universal agreement to standardize methods to manage and prevent endodontic pain.

References:-

1. Rosenberg P et al: The effect of occlusal reduction on pain after endodontic instrumentation J Endodon.1998; 24:492-496
2. JariwalaSP et al: Pain in Endodontics: Causes, Prevention and management Endodontology; 2001;13:63-66.
3. Paul.A.Rosenberg: Clinical strategies for managing endodontic pain Endodontic Topics 2002;3:93-105 Seltzer S,Hargreaves KM: Diffential diagnosis of odontalgia Quintessence2002:449-468.
4. Holland GR: Differential diagnosis of orofacial pain .
5. Principles and practice of endodontics. Philadelphia:Saunders, 2002:520-532.
6. Hargreaves Keiser K.:Local anesthetic failure in endodontics. Mechanism and management Endodontic Topics2002; 1:26-39 .
7. Juni P et al: Are selective COX-2 inhibitors superior to traditional non-steroidal inflammatory drugs?
8. B.M.J2002; 324:1287-1288.
9. 8-Jadyn G.Pak et al: Pain prevelance and severity before, during and after root canal treatment: A systemic review.
10. JOE2013, 37(4):429-438.
11. De Leeuz R et al: Orofacial pain: Guidelines for assessment, Diagnosis and management edi.Hanover Park 11: Quintessence books 2013.
12. Hakan Arslan etal: A survey on clinician preferences in reducing post operative pain in endodontic preactice.
13. Turk Endodod.J 2016; 1(2):67-72.
14. Nivethithan et al: Endodontic Pain: Cause and management: A review IJPSR 2017; 2:63.