International Journal of Recent Advances in Multidisciplinary Topics
Volume 3, Issue 1, January 2022
https://www.ijramt.com | ISSN (Online): 2582-7839


# Non-Surgical Retreatment of Mandibular First Molar-A Case Report

Anil K. Tomer[1], Ayan Guin[2*], Shivangi Jain[3], Geetika Sabharwal[4,] Nivedita Saini[5,] Ayushi Khandelwal[6]

[1]*Professor, Department of Conservative Dentistry and Endodontics, Divya Jyoti College of Dental Sciences and Research, Modinagar, India*

[2,3,4,5,6]*Student, Department of Conservative Dentistry and Endodontics, Divya Jyoti College of Dental Sciences and Research, Modinagar, India*

***Abstract*: The main goal of nonsurgical retreatment are to remove the obturating materials from the root canal area. Failure of endodontic treatment may be due to inadequate shaping, cleaning and obturation, iatrogenic events, or re-infection of the root canal system while the coronal seal is lost after root canal treatment. Regardless of the etiology, the sum of all reasons is leakage and bacterial contamination. This case demonstrates a 3-canal mandibular first molar dealt with through non-surgical root canal therapy. Acute exacerbation changed into stated on a formerly root-stuffed left mandibular first molar with periapical lesions, intraoral swelling and endodontic re-treatment changed into arranged. Clinicians want to be aware about the uncommon root canal anatomy of the mandibular first molar. After thorough root canal cleansing and shaping, root canal obturation with gutta-percha and calcium hydroxide based sealer through single cone method was performed.**

***Keywords*: Endodontics, obturation, re-treatment.**

## 1. Introduction

Endodontics has been the flag-bearer of dentistry because of the truth that very prolonged time. There has been a first rate improvement with in the vicinity of endodontics with in the cutting-edge past, which did now not sluggish down the pace yet. This protected better evaluation of periapical lesions and improving the analysis of the endodontically handled teeth. But then, there were incidences of root canal failures, even though minimal, which did now not fade away [1]. Long term fulfillment of endodontic treatment is primarily based totally on thorough debridement of the premise canal tool followed via manner of way of three dimensional obturation [2].The most commonly used filling material is gutta percha, because of its property of being biochemically inert, having the capacity to three dimensionally seal the endodontic region, in particular at the same time as thermoplasticized, and the possibility of without trouble being removed from the endodontic region during retreatment with/without the association of a solvent. The use of a sealer in conjuction with gutta percha has been endorsed to decorate the bond of gutta percha to dentin. A good sized sort of sealers has been used and new products stay marked [3]. Endodontic failures are not exception and because of this need retreatment.4 These failures rise up due to the factors which encompass get proper of access to related, ignored canals, get proper of access to hollow area perforations, improper cleaning, instrumentation related, ledge formation, separated instruments, distant places devices and obturation related due to coronal leakage [5].

Before setting out with any treatment, it's far profoundly vital to keep in mind all interdisciplinary treatment alternatives in phrases of time, cost, analysis and capacity for affected person satisfaction. Endodontic screw ups need to be evaluated so a choice may be made amongst nonsurgical retreatment, surgical retreatment, or extraction [6]. The dreams of nonsurgical retreatment are to dispose of substances from the foundation canal area and if present, cope with deficiencies or restore defects which are pathologic or iatrogenic in origin [7].

In the modern-day picture, what comes to the endodontists are times of failed endodontic manage due to numerous reasons and its' retreatment. The success of a nonsurgical root canal retreatment is dominated via the removal of previous obturating material and /or necrotic tissue. A perceptive practitioner must deliberate a nonsurgical retreatment best if the succeeding troubles are met; the patients desire to maintain the tooth, periodontally wholesome tooth that can endure an endodontic retreatment. The following case file gives with a similar scenario wherein the teeth requiring retreatment is periodontally sound but the motive for failure of root canal treatment was established as inadequate obturated canal with closing lateral area.

## 2. Case Report

A 23-year-old girl presented with a records of throbbing ache and extra-oral swelling for beyond three days. The ache stored her wakeful at night time and become bobbing up from the lower right aspect of his face radiating to the right ear. Clinical assessment discovered that the affected person had intraoral

*Corresponding author: ayanguin1993@gmail.com

swelling in affiliation with proper mandibular first molar. On radiographic examination, a frank pathology become obvious that become present apical to the roots of the proper mandibular first molar (Fig 1). This teeth have been formerly endodontically handled and the substandard obturation become taken into consideration because the motive for failure. Therefore, a prognosis of post-treatment sickness secondary to bacterial leakage become made.

Fig. 1. Preoperative radiograph w.r.t 46

Fig. 2. Gutta percha retrived successfully

Fig. 3. Clean canal after GP removal

## 3. Retreatment Procedure

After management of the local anaesthesia the use of 2% lidocaine with 1:80000 epinephrine (Indoco remedies, India), the tooth #46 become accessed. Access emerge as regained (wrt 46) with EndoAccess bur No.2 (Dentsply) in a crown-down fashion to boom the orifices. A GP solvent (Xylene) emerge as used to soften the gutta-percha preceding to usage of hand files.After putting off gutta percha the use of Hyflex remover files, the access cavity receives full of the pus. Copious irrigation with sodium hypochlorite and saline turned into performed and canals had been wiped clean with 5.25% sodium hypochlorite and saline. A mixture of electronic apex locator (Dentsply) and periapical radiographs had been used to estimate working lengths. Hyflex remover retreatment file system was used and the existing obturating material and was retrieved effectively (Fig 2). A radiograph was taken after that to ensure the totally removal of the obturating material (Fig 3).

Working lengths of distolingual, distobuccal, mesiobuccal & mesiolingual canals are 20.5mm, 20mm, 19mm, 19mm respectively. After a week, the affected person back to dental health facility for her endodontic visit without any discomfort. Copious irrigation with 5% sodium hypochlorite became carried out at some stage in shaping and cleansing procedure. Patient became medicated with antibiotics, analgesics and muscle relaxants. On next appointment, the canals again, Bio Mechanical Preparation (BMP) became performed the use of Glyde (Dentsply) as a chelating agent and irrigation became alternated the use of Sodium Hypochlorite (NaOCl 3%) and regular saline. Chlorhexidine (Dentachlor 2%) became used as a very last rinse. Biomechanical preparation was done by Protaper gold rotary documents upto F2 in each canals. After a week, the swelling became considerably reduced, canals have been dried with paper points, lined with Sealapex (Kerr Manufacturing Co.) and obturated the use of single cone technique. After endodontic retreatment, the tooth was restored with composite resin (Filtek Z250; 3M ESPE, St Paul, MN) (Fig 4).

Fig. 4. Postoperative Radiograph

## 4. Discussion

Endodontic treatment necessitates talented information and statistics, similarly to a methodical statistics of the premise canal anatomy regarding pulp and its variants.8,9

Unsatisfactory statistics of the premise canal makes endodontics further difficult with the useful resource of the usage of now now not forming the proper get right of access to that permits right now line approach to the canals.

An indication of nonsurgical endodontic retreatment may be apical periodontitis in a previously endodontically treated tooth. However, this can be confirmed with a radiograph which may display screen inadequate density of the obturation or unhealed periapical pathology or a overlooked canal/s. Other now no longer unusualplace reasons for retreatment being technical deficiencies like beside the point filling material, root filling quick of apex, loss of coronal material, inadequate obturation.10

In the present clinical case, nonsurgical retreatment become indicated due to the radiographic look of inadequate root canal therapy. Furthermore, there has been radiographic proof of a periapical lesion with the presence of faulty root filling and coronal microleakage. Generally, the achievement charge of retreatment is taken into consideration to be decrease than the achievement charge of number one endodontic treatment. More specifically, the final results of secondary endodontic remedy has been pronounced to achieve success in 74-77% of cases. Negative prognostic elements are the pre-life of a periapical lesion, the first-class of preceding remedy, the first-class of the coronal healing and the prevalence of iatrogenic errors.11

Studies have proven that general practitioners and college students were the reason for over 1/2 of of the failed times in endodontics.12 Insufficient understanding of endodontics at a graduate college level but over enthusiasm to exercising endodontics without advanced training has added approximately immoderate frequencies of failure.

The targets of endodontic retreatment processes are to cleanse the root canal area of any preceding material present, to catch up on the pathological or iatrogenic deficits on the origin. In addition, endodontic retreatment measures manage and accurate mechanical catastrophes, formerly overlooked canals or subcrestal root fractures. , evaluation strategies permit clinicians to reshape patented canals and easy and fill third-dimensional root canal systems.13,14 When the guiding concepts of case choice are evaluated and modern-day centers are used with superior expertise of endodontics, the possibility of finishing a non-surgical endodontic retreatment is tripled.

## 5. Conclusion

Root canal treatment is a system it truly is done through manner of manner of every dentist regularly. In developing countries the need for area of expertise based totally absolutely workout has however now now not established itself. At handiest a graduate degree the understanding regarding treatment like root canal remedy is minimal and basic. The advanced unique tactics of endodontic treatment modalities are usually attributed to a publish graduate curriculum. There is sufficient ability for achievement of primary root canal filling however reality stays that clinicians are faced with post treatment ailment. Endodontic retreatment may be a appropriate alternative in case of a post remedy ailment following an endodontic failure. Nonsurgical strategies may want to appearance of minor significance or insignificant all through retreatment, for coping with surgical endodontic failure specially while re-endodontic surgical operation seems inevitable. However, with non surgical remedy technique and adequate apical and coronal sealing we will acquire beneficial scientific final results even in case of failed surgically dealt with teeth. Every dentist have to have an intensive information of root canal anatomy and its viable versions earlier than starting root canal treatment as a way to limit the failure rate and the want for next endodontic retreatment.

## References


[1] Raj PKT, Mudrakola DP, Baby D, Govindankutty RK, Davis D, Sasikumar TP, Ealla KKR. Evaluation of Effectiveness of Two Different Endodontic Retreatment Systems in Removal of Gutta-percha: An in vitro Study. J Contemp Dent Pract 2018.19(6):726-31.

[2] Joseph M, Ahlawat J, Malhotra A, Murali-Rao H, Sharma A, Talwar S. In vitro evaluation of efficacy of different rotary instrument systems for gutta percha removal during root canal retreatment. J Clin Exp Dent 2016.8(4):e355-60.

[3] Sadat Shojaee N, Vakilinezhad E, Shokouhi MM. In Vitro Comparison of Efficacy of Neolix and ProTaper Universal Retreatment Rotary Systems in Removal of Gutta-Percha Combined with Two Different Sealers. J Dent (Shiraz) Dec 2019.20(4):285-91.

[4] Antony, Jasmine & Kudva, Aravind & Shetty, Harish & Kini, Shravan & Gowri, Sree. Comparative Efficacy of Three Different Retreatment Rotary Instrument Systems for Removal of Gutta-Percha from Root Canals: A Comparative in Vitro Study. IJPHRD 2019.Vol :10 : 272-77.

[5] Purba R, Sonarkar SS, Podar R, Singh S, Babel S, Kulkarni G. Comparative evaluation of retreatment techniques by using different file systems from oval-shaped canals. J Conserv Dent 2020.23:91-6.

[6] Stabholz A, Friedman S: Endodontic retreatment- case selection and technique. Part 2: treatment planning for retreatment. J Endod 14:12, pp. 607-614, 1988.

[7] Ruddle CJ: Ch. 25, Nonsurgical endodontic retreatment. In Cohen S, Burns RC, editors: Pathways of the Pulp, pp. 875-929, 8th ed., Mosby, St. Louis, 2002.

[8] Pirani C, Pelliccioni GA, Marchionni S, Montebugnoli L, Piana G, Prati C. Effectiveness of three different retreatment techniques in canals filled with compacted gutta-percha or thermafil: a scanning electron microscope study. J Endod 2009;35(10):1433-40.

[9] Savitha A, Rekha AS, Ataide I, Hegde J. Retreatment and surgical repair of the apical third perforation and osseous defect using mineral trioxide aggregate. Saudi Endod J 2013;3(1):34-38.

[10] Pitt ford T. R, Rhodes J. S. Root canal retreatment: I, Case assessment and treatment planning. Dent Update 2004;31:34-39.

[11] Ng YL, Mann V, Gulabivala K. Outcome of secondary root canal treatment: a systematic review of the literature. Int Endod J, 2008; 41:1026-1046

[12] Torabinejad M, Corr R, Handysides R, Shabahang S. Outcomes of nonsurgical retreatment and endodontic surgery: a systemic review. JOE 2009;35(7):930-937.

[13] Ruddle CJ: Ch. 8, Cleaning and shaping root canal systems. In Cohen S, Burns RC, editors: Pathways of the Pulp, pp. 231-291, 8th ed., Mosby, St. Louis, 2002.

[14] Ruddle CJ: Ch. 9, Three-dimensional obturation: the rationale and application of warm guttapercha with vertical condensation, Pathways of the Pulp, pp. 243-247, 6th ed., Mosby Co., St. Louis, 1994.