INTERNATIONAL SCIENTIFIC MEETING (TINI IV) & IKORGI NATIONAL CONGRESS XI

Revolutionary Paradigm for the Future Vision of Endodontics & Restorative Dentistry

November 3\textsuperscript{rd}-5\textsuperscript{th}, 2017 Shangri-La Note! May. Jend. Sungkono 120 Surabaya

BUKU

PROSIDING
P R O C E E D I N G
International Scientific Meeting (TINIIV)
& National Congress IKORGI XI

Theme:
Revolutionary Paradigm for the Future Vision of Endodontics and Restorative Dentistry

Surabaya, November 3rd - 5th, 2017

Steering Committee:
• M.Rulianto,drg.,MS.,SpKG(K)
• Prof.Dr.Latief Mooduto,drg.MS.Sp.KG(K)
• Karlina Samadi,drg.MS.Sp.KG(K)

Organizing Committee:
• Ari Subiyanto, drg.MS.Sp.KG (K)
• Karlina Samadi,drg.MS.Sp.KG(K)
• Dr.Dian Agustin W.,drg.,SpKG(K)
• Eric Priyo Prasetyo,drg.,M.Kes.,SpKG(K)
• Dr.Tamara Yuanita, drg.MS.Sp.KG(K)
• Dr. Ira Widjastuti,drg.,M.Kes.,SpKG(K)
• Dr. Widya Saraswati,drg.,M.Kes.,Sp.KG
• Galih Sampoerno,drg.M.Kes.,SpKG(K)
• Devi Eka Yuniarti,drg.,M.Kes.,SpKG(K)

Editor:
• M. Rulianto,drg.,MS.,SpKG(K)

Reviewer:
• Prof. Dr. Latief Mooduto,drg.,MS.,SpKG(K)
• Dr. Ira Widjastuti,drg.,M.Kes.,SpKG(K)
• Dr. Dian Agustin Wahyuningrum,drg.,SpKG(K)
Eric Priyo Prasetyo,drg.,M.Kes.,SpKG(K)

Published by:
PENGURUS PUSAT IKATAN KONSERVASI GIGI INDONESIA (PP IKORGI) Jl. Mayjend. Prof. Dr. Moestopo No. 47 Surabaya 60132 Telp. (031) 5030255; Fax. (031) 5020256

ISBN 978-602-19108-6-3
Dear colleague,

International Scientific Meeting (TINIIV) & National Congress IKORGIXI is a great scientific meeting place for dentistry specialized in dental conservation. More than 70 full papers go to the Scientific Section of International Scientific Meeting Seminar (TINI IV) & National Congress IKORGI XI from colleagues of various educational institutions, hospitals and dental practitioners specialists and general. We thank you for the participation of our colleagues.

In organizing the International Scientific Meeting Seminar (TINI IV) & National Congress IKORGI I, the committee gives freedom to the contributor of the manuscript to select the desired publication. Contributors can publish papers in proceeding. This proceeding book contains complete papers presented at the International Scientific Meeting (TINI IV) & National Congress IKORGI XI.

We apologize if in the management and acceptance of papers there are many shortcomings. Feedback and criticism build our colleagues hope for improvement in the future. Hopefully this proceeding can be useful for us all.

Congratulations seminar, see you at International Scientific Meeting Seminar (TINI IV) & National Congress IKORGI XI in Surabaya

Surabaya, 3-5 November 2017

Ari Subiyanto, drg.,MS.,Sp.KG(K)
#TABLE OF CONTENTS

OPENING SPEECHES ......................................................................................................................... iii

C-SHAPED ROOT CANAL TREATMENT IN MANDBULAR MOLAR (CASE REPORT)  
Adelia Mutia Indah, Juanita AG, Selviana Wulansari................................................................. 1

HEMISECTION OF MANDBULAR FIRST MOLAR WITH PERFORATED FURCATION  
Adeline Jovita Tambayong*,  
Prof. Dr. Mandojo Rukmo, drg., M.Sc., Sp KG (K)** ................................................................. 7

DIRECT COMPOSITE RESIN RESTORATION REINFORCED WITH SHORT FIBER POST ENDODONTIC TREATMENT ON NECROSIS MOLAR MANDBULAR: A CASE REPORT  
Amarendra Anindita*, R. Tri Endro Untara** .............................................................................. 13

THE ROLE OF GLASS Ionomer cement placement as a barrier in internal bleaching post endodontically treated maxillary anterior : case report  
Amellia Tjandra¹, Agus Subiawahjudi² .......................................................................................... 19

INTRACORONAL BLEACHING ON TOOTH DISCOLORED BY TRIPLE ANTIBIOTIC PASTE  
Andari Putrianti¹, Munyati Usman² ............................................................................................... 25

RETREATMENT AND ROOT CANAL TREATMENT WITH ALL PORCELAIN CROWN RESTORATION AND FIBER POST ON FOUR ANTERIOR TEETH FRACTURE POST TRAUMA  
Arafita Putri Fardani*, Ema Mulyawati** .................................................................................... 31
COMPOSITE RESIN RESTORATION WITH FABRICATED FIBER-REINFORCED POST COMPOSITE ON NECROSE PULP OF MAXILLARY CENTRAL INCISOR POST ROOT CANAL TREATMENT Betagia Swandhika Wisesa* Ema Mulyawati** .................................................. 41

RETROGRADE FILLING USING MINERAL TRIOXIDE AGGREGATE (MTA) AND BONE GRAFT (REGENERATIVE MATERIAL) PLACEMENT AFTER APICOECTOMY AS MANAGEMENT OF NON-SURGERY ENDODONTIC FAILURE IN RIGHT MAXILARY CENTRAL INCISOR WITH PERIAPICAL GRANULOMA Budiono Wijaya¹ and Pribadi Santosa² .......................................................... 49

LITERATURE REVIEW

EFFECTIVENESS DIODE LASER AS ADDITIONAL DEVICE ON ROOT CANAL DISINFETCION
Chitra Iselinni¹, Ratna Meidyawati² .......................................................... 55

APICAL RESECTION: AN ALTERNATIVE MANAGEMENT OF LARGE PERiapical CYST
Clarrisa Fredline*, Ari Subiyanto** .......................................................... 65

MANAGEMENT OF ESTHETIC COMPLEX CASE IN ANTERIOR MAXILLARY TEETH THROUGH A COMPREHENSIVE APPROACH: A CASE REPORT
Cyrilla Prima A. M.¹, Tunjung Nugraheni² .......................................................... 73

MANAGEMENT OF APEXIFICATION WITH MINERAL TRIOXIDE AGGREGATE APICAL PLUG ON PERMANENT MAXILLARY CENTRAL INCISORS : A CASE REPORT
Dani Rudyanto*, Dian A Wahjuningrum.** .......................................................... 81

MANAGEMENT OF FIVE ROOT CANALS IN MANDIBULAR FIRST MOLAR TOOTH: A CASE REPORT
Daryono,¹ Bernard O. Iskandar,² Wiena Widyastuti² .......................................................... 89

NON-SURGICAL MANAGEMENT OF A LARGE PERiapICAL LESION USING A SIMPLE ASPIRATION TECHNIQUE : A CASE REPORT Desneli* Adhita Dharsono** .......................................................... 95
ROOT CANAL TREATMENT AND RESTORATION USING METAL PREFABRICATED TAPERED SERRATED POSTS WITH PORCELAIN FUSED TO METAL FULL CROWN IN FAILURE ENDODONTIC TREATMENT
Dewi Damarsasi*; Diatri Nari Ratih** ................................................................. 103

APICAL RESECTION FOR PERIAPICAL CYST TREATMENT CASE Diana Soesilo........................................................................................................................................... Ill

THE AESTHETIC REHABILITATION OF THE MAXILLARY INCISORS AND SUPRAPOSITION OF THE MANDIBULAR CENTRAL INCISORS
Andina Irinawati Prasetyo¹, Sri Kunarti² ........................................................................ 117

CROWN LENGTHENING AND ALL PORCELAIN JACKET CROWNS WITH THE PREFABRICATED FIBER POST REINFORCEMENT ON THE 12th TOOTH OF THE CLASS IV ELLIS FRACTURE.
Istikhomah Darmawati* ;Yulita Kristanti** ..................................................................... 129

EFFECT OF ADDITION OF WHITE SHRIMP SHELL’S NANO CHITOSAN (LITOPENAEUSVANNAMIEI) IN CALCIUM HYDROXIDE AGAINST FIBROBLAST CELL CYTOTOXICITY (MTT Test)
'Dewa Made Wedagama²,Yusfitra .................................................................................... 139

INTERNAL BLEACHING AND RESTORATION USING PREFABRICATED FIBER POST COMBINED WITH POLYETHYLENE FIBER AND DIRECT COMPOSITE RESIN IN ENDODONTICALLY TREATED TOOTH WITH FLARED CANAL.
Yohannes Dian Indrajati*; TunjungNugraheni** .......................................................... 145

APICAL SURGERY FOR PERIAPICAL LESION MANAGEMENT CAUSED BY TRAUMATIC INJURY
Ni Luh Putu Sri Widani¹, Firmansyah² dan Wignyo Hadriyanto³ ................................. 157
PH CHANGES OF ROOTS FOLLOWING ROOT CANAL DRESSING WITH HYDROGEL CHITOSAN, CONVENTIONAL CALCIUM HYDROXIDE AND A COMMERCIAL CALCIUM HYDROXIDE PASTE: LITERATURE REVIEW
Dwi Yani Sastika G* Trimumi Abidin**.................................................................167

MULTIPLE DIASTEMA CLOSURE USING DIRECT VENEER RESTORATION COMBINED WITH EXTERNAL BLEACHING: A CASE REPORT
Edra Brahmanya Susilo*, Ira Widjiastuti**..............................................................179

HEALING OF LARGE PERIAPICAL LESION WITH NON SURGICAL ENDODONTIC TREATMENT APPROACH: ACASE REPORT
Ellyda Nasution * Dennis **Trimumi Abidin **....................................................185

REPLANTATION AND REPOSITION OF IATROGENIC AVULSION IMPACTED CANINE DUE TO NEGLIGENCE EXTRACTION: A CASE REPORT
Eltica Oktavia * Dennis **Trimumi Abidin **.......................................................193

APEXIFICATION USING MINERAL TRIOXIDE AGGREGATE AND COMPOSITE CROWN RESTORATION WITH FIBER REINFORCED CUSTOMIZED DOWEL CORE ON LEFT CENTRAL INCISOR MAXILLA
Erlita Hapsari*; Diatri Nari Ratih**.........................................................................203

DILACERATED ROOT CANAL TREATMENT USING HYFLEX CM ROTARY FILES
Erliyana¹, Endang Suprastiwi²..................................................................................207

MANAGEMENT OF C-SHAPE CANALS: TWO CASE REPORT
Gary Wijaya* Trimurni Abidin**...............................................................................213

MANAGEMENT OF ANTERIOR DENTAL TRAUMA (TWO YEARS AFTER TRAUMA): A CASE REPORT
Hanny Aryani¹, Bernard O. Iskandar², Dina Ratnasari²...............................................219
ENDODONTIC TREATMENT OF MAXILLARY LATERAL INCISOR WITH SUSPECTED RADICULAR CYST AND EXTERNAL APICAL ROOT RESORPTION: A CASE REPORT
Hasti Dwi Setiati\textsuperscript{1}, Endang Suprastiwi\textsuperscript{2} ................................................................. 223

MANAGEMENT OF NARROW CANAL ON MAXILLARY RIGHT LATERAL INCISIVUS (A CASE REPORT)
Hendro Santoso Malimas\textsuperscript{1}, Tien Suwartini\textsuperscript{2}, Anastasia E. Prahasti\textsuperscript{2} ................. 231

ENDODONTIC RETREATMENT OF MAXILLARY FIRST MOLAR WITH ADDITIONAL OF MB 2 ROOT CANAL A CASE REPORT
Hernika Harperiana\textsuperscript{1}, Juanita AGunawan\textsuperscript{2}, Anastasia E Prahasti\textsuperscript{2} ....................... 237

RETROGADE FILLING USING MINERAL TRIOXIDE AGGREGATE (MTA) AFTER APICOECTOMY IN ENDODONTIC FAILURE CASE WITH OVERFILLED OBTURATION, ACRYLIC CROWN, AND CUSTOM DOWEL POST-CORE
Ida Fitri Setiyowati*, R. Tri Endra Untara** ................................................................. 243

THE SHRINKAGE DIFFERENCES OF ROOT CANAL TREATMENT USING BALANCED FORCE AND STEP BACK PREPARATION TECHNIQUE WITH THERMOPLASTICIZED FILLING TECHNIQUE (SCANNING ELECTRON MICROSCOPY)
I Gusti Agung Ayu Hartini, Gede Bintang Anugrah......................................................... 251

ANTIBACTERIAL EFFICACY OF CHITOSAN AS ROOT CANAL IRRIGATION IN ENDOdontICS ON ENTERECOCCUS FAECALIS (LITERATUR REVIEW)
Imelda Darmawi * Trimurni Abidin** ................................................................. 259

EFFECT OF CURRENT LED LIGHT CURING ON POLYMERIZATION OF DIFFERENT PHOTOINITIATOR OF COMPOSITE RESIN: A LITERATURE REVIEW
Juliana Siregar * Dennis** Rasinta Tarigan*** ................................................................. 269

APICAL CURRETAGE AND PREFABRICATED FIBER POST WITH RESTORATION OF CLASS IV COMPOSITE RESIN
Kiki Maharani Fadhilah*, Pribadi Santosa** ................................................................. 281
ROOT CANAL TREATMENT OF SUBGINGIVAL CARIES ON DISTAL
MANDIBULAR SECOND MOLAR DUE TO WISDOM TOOTH IMPACTION : A CASE REPORT
Kissy Wicaksana, Bernard O. Iskandar, Aryadi Subrata

HEMISECTION OF MANDIBULAR FIRST MOLAR
Leedwin Kalyana Alison, Wignyo Hadriyanto

INTRACORONAL BLEACHING FOLLOWED BY DIRECT COMPOSITE RESTORATION AS A MANAGEMENT OF DISCOLORED ANTERIOR TEETH : A CASE REPORT
Lidya Octavia, Sri Subekti Winanto, Elline

ANTIBACTERIAL POTENTIAL OF N-ACETYLCYSTEINE AS AN ENDODONTIC IRRIGANT AGAINST ENTEROCOCCUS FAECALIS BIOFILM
Ridzki Ridhalaksani, Kamizar, Nilakesuma Djauharie

BLEACHING TECHNIQUE FOR DISCOLORATION IN POST ENDODONTIC TREATMENT TOOTH : A CASE REPORT
Makkunrai Eka Kramatawati Elizabeth, Karlina Samadi, drg., MS, SpKG(K)

THE USE OF PREFABRICATED FIBER POST COMBINED WITH POLYETHYLENE RIBBON AS CUSTOMIZED POST IN WIDE ROOT CANAL FOLLOWING ENDODONTIC RETREATMENT A CASE REPORT
Marsintha L.M.T, Dennis, Trimurni Abidin

RESTORATION OF ENDODONTICALLY TREATED TEETH WITH SEVERE LOSS OF TOOTH STRUCTURE - CASE REPORT
Mike Wijaya, Dennis, Trimurni Abidin

TREATMENT OF DISCOLORATION ON THE MAXILLARY CENTRAL INCISOR WITH WALKING BLEACH TECHNIQUE (A CASE REPORT)
Muh. Yusri, Rahmi Alma Farah

ROOT CANAL TREATMENT OF LOWER RIGHT MOLAR IN CHRONIC TERMINAL RENAL FAILURE.
Muhammad Zaal Haq, Anggraini Margono

RETRIEVAL OF SEPARATED INSTRUMENT FROM THE CURVED CANAL USING ULTRASONIC TIP INSTRUMENT : A CASE REPORT
Natalia Iskandar Setiawan, Bernard O Iskandar, Aryadi Subrata
RETAINING EXTENSIVE CAVITY HYPERPLASTIC PULPITIS MANDIBULAR FIRST MOLAR WITH PULPECTOMY AND ENDOCROWN : A CASE REPORT
Paulus Alexander¹, Eko Fibryanto², Taufiq Ariwibowo² ..................................................... 371

COMPREHENSIVE TREATMENT OF MAXILLARY ANTERIOR TEETH : A CASE REPORT
Priska Lasari¹, Tien Suwartini², Wiena Widyastuti² .......................................................... 375

DISCOLORATION TREATMENT WITH IN OFFICE BLEACHING : A CASE REPORT
Rike Kapriani .................................................................................................................. 381

POTENCY OF CHITOSAN NANO GEL AS DESENSITIZING AGENTS
Rina Oktavia* Trimuni Abidin** .................................................................................... 389

CONVENTIONAL ENDODONTIC RETREATMENT OF MANDIBULAR FIRST MOLAR WITH UNDERFILLING
Riza Permitasari*, Kamizar** ........................................................................................ 399

DIRECT VENEER COMPOSITE FOR DIASTEMA AND PEG SHAPED ON ANTERIOR MAXILLARY TEETH (CASE REPORT)
Rozyta K Hakim¹, Juanita A Gunawan², Selviana Wulansari² ............................................ 409

ROOT CANAL RETREATMENT OF TRUE COMBINED LESION IN MANDIBULAR RIGHT CANINE
Silviana Swastiningtyas¹, Anggraini Margono² .................................................................. 415

ENDOCROWN AS A FINAL RESTORATION FOR ENDODONTICALLY TREATED TEETH WITH CHRONIC APICAL ABSCESS-A CASE REPORT
Stephani Marthios¹, Sri Subekti Winanto², Elline² ............................................................ 423

DIFFERENT FERRULE DESIGNS ON FRACTURE RESISTANCE IN MAXILLARY ANTERIOR TOOTH : LITERATURE REVIEW
Tri Sari Dewi Purba * Dennis**Rasinta Tarigan** ............................................................ 429

ROOT CANAL RETREATMENT OF A RIGHT MAXILLARY LATERAL INCISOR TEETH CAUSED OF INADEQUATE ROOT CANAL TREATMENT
Waviyatul Ahdi¹, Nilakesuma Djauhari² .......................................................................... 441

A COMPARATIVE EVALUATION OF FRACTURE RESISTANCE OF ENDODONTICALLY TREATED TEETH OBTURATED WITH AH PLUS AND
GUTTAFLOW SEALERS USING DIFFERENT OBTURATION TECHNIQUES: LITERATURE REVIEW
Yeamy Agustina Marpaung* Trimumi Abidin ** IndraN*** .............................................451

CASE REPORT: SURGICAL ENDODONTIC TREATMENT OF MAXILLARY CENTRAL INCISORS WITH LARGE PERiapICAL LESION
Ekhtiyanto Cahyadi KY.¹, Ira Widjiastuti² .................................................................461

MANAGEMENT OF TRAUMATIZED TOOTH WITH OPEN APICAL AND DISCOLORATION: A CASE REPORT
Farida Widhi Astuti¹, Edhie Arif Prasetyo² .................................................................467

ROOT CANAL TREATMENT IN MAXILLARY SECOND PREMOLAR WITH CORONAL FLARING SHAPED OF THE TWO-THIRD ROOT CANAL
Dwi Amiawaty*, Dewa Ayu Nyoman Putri Artiningsih** ...........................................475

APEXIFICATION WITH MINERAL TRIOXIDE AGGREGATE (MTA) AND INTERNAL BLEACHING ON RIGHT UPPER CENTRAL INCICIVUS TOOTH WITH DISCOLORATION
Elisabeth Reni* dan Pribadi Santosa** .................................................................483

MESIAL ROOT HEMISECTION AND RESTORATION AS A TREATMENT OPTION OF MANDBULAR FIRST MOLAR: A CASE REPORT
Dinda Dewi Artini, drg¹, Prof. Dr. Ruslan Effendy, drg. MS., Sp.KG(K)² ..........................493

ROOT RESECTION OF MAXILLARY FIRST MOLAR: A CASE REPORT
Dina Ristyawati¹, M. Mudjiono² .............................................................................501

THE POTENTIAL ROLE OF PROPOLIS ON DENTIN REGENERATION AND REPAIR DURING DIRECT PULP CAPPING TREATMENT
Ardo Sabir¹²*, Juni Jekti Nugroho² .........................................................................509

AESTHETIC CORRECTION OF A MICRODONTIC TOOTH USING DIRECT COMPOSITE RESIN: A CASE REPORT
Mulia Rahmah¹, Cecilia G Lunardhi² ...................................................................521

ESTHETIC REHABILITATION OF SEVERELY DISCOLORED ANTERIOR TOOTH WITH INTERNAL BLEACHING FOLLOWED BY DIRECT COMPOSITE LAMINATE VENEER
Gustantyo Wahyu Wibowo¹ and R. Tri Endra Untara² ............................................527
MTA APPLICATION ON APICAL PERFORATION WITH FIBER POST AND COMPOSITE RESIN RESTORATION.
Ivan Salomo¹, Ira widjiastuti² ................................................................. 541

AESTHETIC ENHANCEMENT WITH A COMBINATION OF EXTRACORONAL BLEACHING AND VENEER PROCEDURE
Ketut Sri Widyawati*, Ema Mulyawati** .................................................... 547

SUCCESSFUL USE OF BIODENTIN FOR A VITAL PULP THERAPY ON A LOWER MOLAR DEEP CAVITY
Mochammad Kennedy* Trimurni Abidin** .................................................. 555

TREATMENT OF ENDO PERIO LESION WITH TRAUMATIC OCCLUSION ON RIGHT LATERAL INSICIVUS MAXILLARY
Norma Avanti \ Nila Kesuma Djauharie, drg, MPH, SpKG(K)² .................................. 561
ENDODONTIC RETREATMENT OF MAXILLARY SECOND PREMOLAR WITH ROOT CANAL CONFIGURATION VERTUCCI CLASS II
Mettasari Puspa Wardoyo¹, Dewa Ayu Nyoman Putri Artiningsih² .................................. 569

ROOT CANAL TREATMENT OF UPPER FIRST MOLAR WITH TWO-THIRD APICAL OBLITERATION
Celine Marissa¹, Munyati Usman² ................................................................. 579

MANAGEMENT ON APICAL THIRD FRACTURE OF CENTRAL INCISOR: A CASE REPORT
Putu Ferbika¹, Latief Mooduto² ........................................................................... 587

SMILE MAKEOVER IN THE PATIENT WITH MULTIPLE CARIES, FRACTURE AND LABIOVERSION
Ratih Elisa Nandarani¹, Kun Ismiyatin² ................................................................ 593

ROOT CANAL TREATMENT IN FIRST LOWER LEFT MOLAR WITH MIDDLE MESIAL AND RADIX ENTOMOLARIS: CASE REPORT
Raymond Kandou*, Nirawati Pribadi** ............................................................ 599

ROOT CANAL TREATMENT WITH COMPOSITE RESIN RESTORATION AND POLYETHYLENE FIBER AS REINFORCEMENT IN MANDIBULAR RIGHT SECOND MOLAR TOOTH WITH A SINGLE ROOT CANAL
Reni Nofika*, Tunjung Nugraheni** ...................................................................................................................................... 607

THE CONSERVATIVE MANAGEMENT OF EXTERNAL ROOT RESORPTION OF PERMANENT INCISIVE CENTRAL CAUSED BY A TRAUMA : A CASE REPORT
Ruth Sarah Wibisono¹, Tamara Yuanita² ................................................................................................................. 617

ROOT CANAL RETREATMENT OF PERIAPICAL ABSCESS ON MAXILLARY LATERAL INCISOR
Sasi Suci Ramadhani¹, Ratna Meidyawati² ................................................................................................................. 623

APEXIFICATION AND ESTHETIC MANAGEMENT OF DISCOLORED AND FRACTURED NECROTIC TOOTH WITH IMMATURE ROOT:
A CASE REPORT
Sinta Puspitadewi¹, Adioro Soetojo² .......................................................................................................................... 629

RESTORATION DIRECT COMPOSITE CLASS I WITH TECHNICAL STAMP : A CASE REPORT
Ricky Yudatmoko¹, Laksmiari Setyowati² ..................................................................................................................... 639

AESTHETIC TREATMENT ON NON VITAL TRAUMATIC ANTERIOR TEETH BY INTRACORONAL BLEACHING
Sumitro TH¹, Nanik Zubaidah² ................................................................................................................................. 645

MANAGEMENT OF FRACTURED INSTRUMENTS BY FILE BYPASS TECHNIQUE IN ROOT CANAL MANDIBULAR MOLAR
Meita Herisa¹, Ratna Meidyawati² ............................................................................................................................... 651

BICUSPIDIZATION : TREATMENT FURCAL PERFORATION IN MANDIBLE MOLAR
Tri Estiyaningsih¹, M.Rulianto² ....................................................................................................................................... 659

THE ANTBACTERIALEFFECT OF ADIODE LASER ON ENTEROCOCCUS FAECALIS BIOFILM
Ayu Sandini, Ratna Meidyawati ............................................................................................................................... 667

CASE REPORT
MANAGEMENT OF CRACK TOOTH SYNDROME ON VITAL TOOTH MAXILLARY LEFT FIRST MOLAR
LailiAznur*, Irmaleny** .............................................................................................................................................. 679
ROOT CANAL RETREATMENT OF TRUE COMBINED LESION IN MANDIBULARY RIGHT CANINE

Silviana Swastiningtyas¹, Anggraini Margono²

¹ Post Graduate Student, Department of Conservative Dentistry, Faculty of Dentistry, Universitas Indonesia
² Lecturer, Department of Conservative Dentistry, Faculty of Dentistry, Universitas Indonesia

ABSTRACT

The pulp and periodontium are closely related, they have embryonic, anatomic and functional inter-relationship. Pulpal infection communicates with periodontal disease through various routes, as a result they formed endo perio lesion. In this case, based on anamnesis, clinical and radiograph examination refer to as true combined lesion. The purpose of this case report is to present a clinical case of root canal retreatment of true combined lesion in right mandibulary canine. A 47-year-old man was referred for root canal retreatment of right mandibulary canine to the Conservative Dentistry Clinic. He felt pain and discomfort while chewing on his lower right tooth. Five years earlier, he had extensive cavity and swelling on his tooth so it had been treated and restored by former dentist. Four years later, the symptoms returned and from clinical examination showed a temporary filling on tooth #43, sensitive to percussion and palpation, no respond to cold test, tooth mobility °2, sinus tract on lingual side, periodontal pocket 6 mm in mesial and 4 mm on distal area. Pre-operative radiograph showed underfilled obturation and difused periapical radiolucrency with diameter of 10 mm. Considering the clinical and radiographic findings, our final diagnosis was chronic apical abscess et causa inadequate root canal treatment and chronic marginalis periodontitis with true combined lesion according to Cohen’s classification of endo perio lesion. Therefore, root canal retreatment and periodontal treatment was decided to be performed. Relief of pain, decrease in lesion size and tooth mobility have shown that these treatments gave us positive results.

Keywords: root canal retreatment, true combined lesion, mandibulary canine
INTRODUCTION

Endo perio lesions is a challenging condition for dental professionals regarding the diagnosis and treatment. Cross-infection between the root canal and the periodontal ligament can occur via the following pathways such as apical foramen, lateral and accessory canals, dentinal tubules, iatrogenic perforations and vertical root fracture.\textsuperscript{1,2} Endodontic-periodontal problems are responsible for more than 50% of tooth mortality.\textsuperscript{3,4} The relationship between periodontium and pulpa was first discovered by Simring and Goldberg in 1964. Since then, the term “endo-perio lesion” has been used to describe this type of lesions due to same inflammatory products found in both periodontal and pulp tissues.\textsuperscript{2,4}

In this case report, considering the clinical and radiographic findings, the diagnosis was true combined endo perio lesion. Root canal reinfection due to endodontic failure and deep periodontal pocket on adjacent teeth was found in this case. Pre-operative radiograph showed underfilled obturation and diffused periapical radiolucency with diameter of 10 mm.

The prognosis of this case was in good condition because the tooth had straight canals, no blockage or obliteration, well developed apical constraction and patient’s medical history was non-contributory. Root canal retreatment and periodontal curretage had been our treatment planning. Healing process that happened was forming granulomatous fibrovascular tissues and increasing osteoblast activity and mesenchymal cell on alveolar bone that can result bone regeneration.\textsuperscript{8} The purpose of this case report is to present a clinical case of root canal retreatment of true combined lesion in right mandibulary canine.

CASE REPORT

A 47-year-old man was referred for root canal retreatment of right mandibulary canine to the Conservative Dentistry Clinic. He felt pain and discomfort while chewing on his lower right tooth. Five years earlier, he had extensive cavity and swelling on his tooth so it had been treated and restored by former dentist. Four years later, the symptoms returned and from clinical examination showed a temporary filling on tooth #43, sensitive to percussion and palpation, no respond to cold test, tooth mobility °2, sinus tract on lingual side, periodontal pocket 6 mm in mesial and 4 mm on distal area. Pre-operative radiograph showed underfilled obturation and diffused periapical radiolucency with diameter of 10 mm. Considering the clinical and radiographic findings, our final diagnosis was chronic apical abscess et causa inadequate root canal treatment and chronic marginalis periodontitis with true combined lesion according to Cohen’s classification of endo perio lesion. Therefore root canal retreatment and periodontal treatment was decided to be performed. Our final restoration was porcelain fused to metal with fiber post.
TREATMENT PLANNING

After placing a rubber dam, the restoration was removed and the access cavities were prepared by Endo Access Bur and Endo Access Kit (Dentsply, Switzerland). Artificial wall on distal wall was made by composite resin. The deficient root canal filling materials were removed using Universal Rotary Retreatment files (Dentsply, Switzerland). Root canal was explored with number #10 K-file and Proglider (Dentsply, Switzerland) until working length then prepared by ProTaper Next (Dentsply, Switzerland) to size X4/24.5 mm. Working length were determine using electronic apex locator (Pixi, Dentsply, Switzerland). The canal was irrigated with 2.5% sodium hypochlorite and 17% EDTA solution by syringe with side-vented 30-gauge needle and activated by Endoactivator (Dentsply, Switzerland). The additional irrigation was using 2% chlorhexidine. Calcium hydroxide was placed as intracanal medicament and the canal was sealed by temporary filling.

Two weeks later, root canal treatment was completed with no symptoms and no tenderness to percussion. The canals were rinsed with 2.5% sodium hypochlorite solution and 17% EDTA then dried by using sterile paper point. The root canal was obturated with gutta-percha and AHplus sealer by using lateral condensation technique. A radiograph was taken to evaluate the obturation. GIC was placed as bases and temporary filling. Final restoration was accomplished one month later by porcelain fused to metal with fiber post.
DISCUSSION

The endo-perio lesions is a challenging factor to clinicians as far as diagnosis and prognosis of the involved teeth are concern. Correct diagnosis is an important factor to determine the treatment and longterm prognosis. Complex root canal anatomy may prevent satisfactory removal of bacteria and biofilm from root canal surfaces resulting in failure of endodontic treatment. When pulpal and periodontal lesions occur concurrently, it is described as combined lesion. In this conditions, the treatment and prognosis of the tooth are different from those of teeth involved with only primary endodontic disease. The tooth requires both endodontic and periodontal treatments.

Based on anamnesis, clinical and radiographic findings, the tooth was diagnosed as chronic apical abscess et causa inadequate root canal treatment and chronic marginalis periodontitis with true combined lesion according to Cohen’s classification of endo perio lesion. Endodontic failure on tooth #43 caused reinfection on root canal system that induced inflammation reaction on periapical tissue surrounding.
foramen apical leading to destruction of the periapical alveolar bone causing breakdown of surrounding hard and soft tissues. Therefore, periapical abscess was formed and expanding to marginal area. Plaque and calculus accumulation around the tooth caused inflammation on periodontal tissues then evolved to periodontal pocket formation on mesial side was 6 mm deep and distal side was 4 mm deep. This periodontal lesion expanded to apical area that merge with periapical lesion forming true combined endo-perio lesion.

Proper endodontic and periodontal treatment is a key factor for treatment success. Zone of infection on root canal system can be removed by endodontic retreatment and provoke healing process on periapical area. Periodontal treatment such as periodontal curetage can eliminate the infection origin located in marginal area. Therefore, complete debridement can be done in both direction from apical and marginal, that leading to optimal result.

In this case report, the cleaning and shaping procedures of the root canals were performed in combination between
rotary NiTi instruments and irrigation with sodium hypochlorite, EDTA and CHX. According to Bird, Chambers and Peter, rotary nickel-titanium (NiTi) instruments have become a standard tool for shaping root canal system. Compared with conventional stainless-steel instruments, these instruments offer several advantages. For instance, they are more flexible and have increased cutting efficiency. The preparation of a reproducible glide path, a smooth passage that extends from the canal orifice in the pulp chamber to its opening at the apex of the root, makes a continuous and uninterrupted pathway for the rotary NiTi instrument to enter and to move freely to the root canal terminus. The main purpose of a glide path is to create a root canal diameter the same size as the first rotary instrument used or ideally, a size larger than that. In this case, a reproducible glide path had been created by #15 k-file then continued by rotary ProGlider (Dentsply®, Maillefer).

ProTaperNext (Dentsply®, Maillefer) was used because of its flexibility and cutting efficiency properties. ProTaper Next file has progressive properties taper design in the apical region and taper which is downward to the coronal with an off-centered rectangular cross-section design which is symmetrical on both sides with an offset from the central axis of rotation that is enable it to produce an asymmetrical rotational movement. This movements make an instrument move like a phenomenon which are called the rotational precision or swagger. The swaggering motion initiates the activation of the irrigation solution during canal preparation, further improving debris removal. ProTaper Next files are manufactures using M-Wire NiTi to increase flexibility and cyclic fatigue resistance of the files. Each file comes with an increasing and decreasing percentage tapered design on a single file. This multiple progressive taper concept helps to reduce contact between the cutting flutes of the instrument and the dentine wall, thus reducing the possibility of taper lock (screw-in-effect). It also increases flexibility and cutting efficiency.

The microbial flora in the canals of the teeth after failed endodontic therapy appears to be a very limited assortment of the microorganism that have been reported in untreated root canals. The common recovery of E.faecalis, from the root canals of the teeth in which the previous treatment has failed, is notable. E.faecalis appears to be highly resistant to the medicament used during treatment and is one of the few microorganism that has been shown in vitro to resist the antibaterial effect of calcium hydroxide. These microorganism appear to have an ability to utilize opportunities created by the removal of other microbes and also to have the capacity to grow in the low-nutrient environment of the treated canal.

Additional irrigation used in this case was 2% chlorhexidine (CHX) as a final flush. CHX has a narrow spectrum for gram-negative bacteria but is effective against most gram-positive bacteria and
also fungi. CHX is the agent of choice when there are gram-positive resistant enterococci present in the root canal, which may be the case in retreatment situations.\textsuperscript{19,22}

Calcium hydroxide can be used as an intracanal medicament because of its bactericidal, anti-inflammatory and proteolytic properties that inhibits resorption and favor repair. It also inhibits periodontal contamination from instrumented canals via patent channels connecting the pulp and periodontium before periodontal treatment removes the contaminants. Calcium hydroxide promotes the formation of hard tissues and enhanced mineralization due to activation of alkaline phosphatase, resulting in the release of phosphate groups which then react with calcium ions.\textsuperscript{22,23,24}

CONCLUSION

This case demonstrates that proper diagnosis, followed by removal of etiological factors, will restore health and function to a tooth with attachment loss caused by an endo-perio lesion. Thereby, the immediate and true management of the endo-perio lesions can impede the loss of the natural tooth and delay the more complex treatments.

REFERENCE

10. Siqueira J RI. Microbiology and


Theme:
Revolutionary Paradigm for the Future Vision of Endodontics and Restorative Dentistry