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

Revolutionary Paradigm for the Future Vision of Endodontics & Restorative Dentistry

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

BUKU

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

Surabaya, November 3rd - 5th, 2017

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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
OPENING SPEECHES

Dear colleague,

International Scientific Meeting (TINI IV) & National Congress IKORGI XI 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)
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ROOT CANAL TREATMENT OF LOWER RIGHT MOLAR IN CHRONIC TERMINAL RENAL FAILURE.

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ABSTRACT

Endodontic treatment in patients with a medical history of chronic terminal renal failure requires special consideration for endodontic treatment because of the tendency for increased bleeding, susceptibility to infection and interactions with drug use. Male patients, aged 67, came to UI dental conservation clinics with complaints of large right hollow lower right molars, patching and root canal treatment was never completed. Patients have a history of systemic Kidney Failure disease since 2009. Patients are taking Calcium Carbonate, Sodium Bicarbonate, Vitamin B12, folic acid, amlodipine, allopurinol and gliquidone. The dental diagnosis 46 is a chronic apical periodontitis et causa of incomplete root canal treatment. The treatment plan, in this case, is conventional endodontic treatment and dowel crown restoration plan. For prophylaxis, Dexyclav Antibiotics 1x daily for 5 days, Paracetamol when needed, mouthwash 4x daily and multivitamin. After the complaint is absent, root filling is done using F3 gutta protaper with AH Plus sealer and then given GIC LC base. At the next visit, gutta is taken on the distal root canal along 2/3 root canals, then done fiber post printing. Subsequent visits were subjected to post-test and cementation was then performed by crown preparation. The next visit was to cement the Porcelain fused to Metal crown and control 3 months later. Conclusions: Patients diagnosed with Chronic Terminal Renal Failure have a tendency to bleed due to decreased production of von Willebrand factors, increased nitric oxide and prostacyclin production, platelet dysfunction, anemia and uremic toxins. Root canal treatment should start the day after the haemodialysis schedule, to prevent the spread of toxins. In these patients, radiography after 3 months of treatment showed a good healing.

Keywords: root canal treatment, chronic terminal renal failure, lower right molar.

INTRODUCTION

Chronic Terminal Renal Failure is a condition that indicates a decline in kidney function that lasts long, chronic and generally is not reversible, with progressive damage of the nephron.¹² The deterioration of bilateral, progressive and chronic nephrons causes uremia and can lead to
The patient’s defense depends on active action, either with long-term dialysis or successful kidney transplantation. During the last decade, there has been a significant improvement in the prognosis of this disease because the development of dialysis and transplantation techniques has provided an opportunity for survivors to face the loss of overall kidney function.

Systemic diseases including chronic renal failure may provide some pathological manifestations in the oral cavity. From a study of chronic renal failure patients, more than 90% had symptoms of uremia in the oral cavity and surrounding areas such as parotitis, stomatitis, gingivitis, xerostomia, and the taste and smell of ammonia. In extraoral, increased incidence of asymptomatic enlargement of salivary glands (parotitis) is thought to be associated with episodic dehydration experienced by patients with chronic renal failure and from uremic toxins, but few data have been found on changes in salivary gland function in these conditions.

Complaints in the oral cavity commonly experienced by patients are dry mouth (xerostomia), halitosis, and metal taste. The taste and smell of metal (uremic foster) is a characteristic of uremic patients and is caused by the high concentration of urea in saliva which will be hydrolyzed to ammonia by urease enzyme produced by Streptococcus mutans bacteria. This will also cause an increase in salivary pH. While the increase in phosphate concentration in saliva contributes to an increase in salivary buffer capacity. Oral ulceration may be due to the same factors as uremic stomatitis or wound healing in patients with chronic renal failure. This oral ulceration tendency is mainly on the inferior surface of the tongue and the floor of the mouth. In the oral cavity, there is frequent bleeding of the gingiva, which is thought to be related to changes in platelet quality and quantity and use of anticoagulant drugs (heparin).

Patients with Chronic Terminal Renal Failure, have special needs to consider before starting dental treatment. Treatment in these patients should be related and tailored to the complications that occur. Patients with hypertension should be treated according to established procedures for hypertensive patients, patients with anemia should be treated according to the requirements established for anemic patients. Before starting treatment, the patient should have a medical evaluation for the last 3 months.

In patients receiving dialysis, the recommendation equals patients with conservative care with the following considerations:
- If there is potential for infection, care techniques should be done carefully by performing a maximum irrigation in the operative area and antibiotics.
- Use of preoperative mouth rinses with 0.12% chlorhexidine and optimal maintenance of oral hygiene.
CASE

Male patients, aged 67, came to UI dental conservation clinics with complaints of large right hollow lower right molars, patching and root canal treatment was never completed. Patients have a history of hypertension that induces systemic Kidney Failure disease since 2009. Patients are taking Calcium Carbonate, Sodium Bicarbonate, Vitamin B 12, folic acid, amlodipine 10 mg, allopurinol 100 mg and gliquidone 30 mg.

On an objective examination found discolored 46 teeth with inadequate old restorations, negative pulp sensitivity tests, and percussive sensitivity. Based on the X-ray seen a periapical lesion on the tooth 46.

The diagnosis 46 is a chronic apical periodontitis etcausa of incomplete root canal treatment. The treatment plan, in this case, is conventional endodontic treatment and dowel crown restoration plan.

CASE MANAGEMENT

Once the diagnosis is established, the operator dismantles the old restoration and opens access to the root canal. Afterwards, a root canal line with file # 10 for the mesiolingual root canal and # 15 for the distal root canal with the reference point of the mesiobuccal and distobuccal discs of the tooth 46 was taken taking the radiograph to determine the length of the work.

Based on X-ray images obtained the length of the work of the root channel of 20 mm mesiobuccal, the Bukit 20 mm root canal and the working length of the 20mm root canal tube. Furthermore, a root canal preparation was made using ProTaper Rotary (DentsplyMaillefer, Switzerland). Obtained Main file # F3 / 17 mm BukioBukal root, # F3 / 19 mm for Distobuccal root canal and # F3 / 20 mm for Palatal root canal. Every change of equipment is always interspersed with 2.5% NaOCl irrigation. After preparation is complete, irrigate again with 2.5% NaOCl and aquadest then dried with paper point and given medication Ca (OH) 2 then patched temporarily (GC Caviton).
For prophylaxis, Dexyclav 500 mg Antibiotics lx daily for 5 days, Paracetamol 500 mg when needed, mouthwash 4x daily Mouthwash enzyme and multivitamin. After the complaint is absent, root filling is done using F3 gutta protaper with AH Plus sealer and then given GIC LC base. Charging is done in accordance with the length of work.

At the next visit guttap was taken on the distal root canal along 2/3 root canals, then the root canal dowel preparation was done.

Subsequent visits were subjected to post-test and cementation was then performed by crown preparation but previously gingival electrocautery was performed around the tooth.

The next visit was to cementing the Porcelain fused to Metal crown and recall 3 months later.
Theme:
Revolutionary Paradigm for the Future Vision of Endodontics and Restorative Dentistry
Recall 6 months post treatment taken at different angles, the radiolucent image appears to decrease more. But on the apical on the distal side still visible radiolucent residual. Indicates that the lesion is in the healing process.

**DISCUSSION**

The initial stage of treatment to be performed is an appropriate history and diagnosis. In this case, it was found that the patient had been diagnosed with Chronic Terminal Renal Failure since 2009 and was taking Calcium Carbonate, Sodium Bicarbonate, Vitamin B 12, folic acid, amlodipine 10 mg, allopurinol 100 mg and gliquidone 30 mg. Teeth have been done root treatment but not complete as well as from the pulmonary sensitivity test results obtained negative results. Then reinforced from radiographic photographs, it was found that there was radioopaque in the area of 1/3 tooth corona 46. From the examination, we found a diagnosis of chronic apical periodontitis with the odontogenic source, necrosis of dental pulp 46.

The principle of treatment is to eliminate the infection, the necrotic pulp tissue and the elimination of pathogenic microorganisms to the maximum extent possible by using appropriate irrigation and medication of root canals. Prophylactic antibiotics (Amoxicillin 250 mg) are also given for 5 days to avoid the occurrence of secondary infection.

NaOCl is an irrigation material widely used in endodontic treatment because it has many advantages, among others can dissolve organic tissue and high antibacterial properties. Use of this irrigation solution does not affect its systemic condition if used according to the procedure. The medicaments used are Ca (OH) 2 because it is the gold standard in dentistry and most biocompatible with body tissues compared to other medicaments.

In patients diagnosed with Chronic Terminal Renal Failure, the dentist should be aware of and pay special attention to the administration of drugs, especially those excreted through the kidney or nephrotoxic and should be administered in reduced or avoidable doses altogether. Patients with renal impairment often react abnormally to certain drugs and the usual doses can cause serious toxic effects. Drugs that are often used in dentistry such as tetracycline, aspirin, NSAIDs, acyclovir, meperidine, and acetaminophen should be avoided since the administration of nephrotoxic drugs has the potential for further kidney damage. Although there are already available and known lists of hazardous medicines for
people with Chronic Terminal Renal Failure, it is best to consult a doctor to treat them. In general, a full dose of most drugs may be given if the patient’s GFR is greater than 20-30% of normal (GFR > 20-30 cc/min). Patients with lower GFR and patients with end-stage renal failure usually require dose adjustment.

The main purpose of a treatment is healing, therefore we must know the mechanism. So we can design a treatment approach that maximizes conditions that support wound healing, such as effective disinfection of the root canal system, bleeding control, and medication.

Oral problems that can be found in Chronic Terminal Renal Failure patients such as Xerostomia, due to fluid intake restriction or the effect of antihypertensive drugs, the patient needs to be prescribed a mouthwash that can increase salivary stimulation.

Patients diagnosed with Chronic Terminal Renal Failure have a tendency to bleed due to decreased production of von Willebrand factor, increased nitric oxide and prostacyclin production, platelet dysfunction, anemia and uremic toxins. Root canal treatment should start the day after the haemodyalization schedule, to prevent the spread of toxins.

To control the occurrence of bleeding during root canal treatment can be prescribed Tranexamic Acid 500 mg 2x daily in these patients. The use of local anesthesia such as Lidocaine, is generally safe in these patients by infiltration, whereas for nerve blocks should be avoided as they tend to cause bleeding.

Healing process begins when inflammation occurs. When irritants in the root canal or in periapical tissue are eliminated by endodontic treatment, inflammatory mediators are no longer produced in periapical tissue due to reduced immunoinflamatory cells. Inflammatory mediators are disabled by the body’s mechanisms to prevent inflammatory reactions.

In these patients, radiography after 3 months of treatment showed a good healing. However, at 6 months after treatment, bone density on the distal periapical roots of the mesial tooth is not perfect. When compared with healing in normal patients, the healing of periapical lesions in these patients is slower. Because Autoantibodies can affect protein in the process of bone cell differentiation. Autoantibodies can affect the process of formation and inhibit healing.

Loss of clinical symptoms and periapical lesions is a leading indicator of root canal treatment is said to be successful. For treated teeth with vital pulp status and no periapical lesions found before treatment, efficacy is characterized by a tooth that remains asymptomatic, and no new apical lesion is formed. The emergence of new apical lesions signifies the failure of root canal treatment. As for teeth with necrotic pulp status before treatment, it is
said to succeed if the tooth remains asymptomatic, apical lesions heal and no new apical lesions appear. If new symptoms or dilated lesions in the apical tooth indicate root canal treatment fails.  

CONCLUSION
The success of 46 dental endodontic treatments in patients with systemic diseases of chronic renal failure is influenced by several factors, including: Use of preoperative mouth rinses with 0.12% chlorhexidine and optimal maintenance of oral hygiene.- If there is potential for infection, care techniques should be done carefully by performing a maximum irrigation in the operative area and antibiotics.

Use of prophylactic antibiotic drugs Amoxicillin and Penicillin require dose adjustment as well as supplemental supplementation after hemodialysis and treatment of these patients, should endodontic treatment be scheduled on the day after hemodialysis. Before and on the day of hemodialysis, patients are generally tired and may have a tendency to bleed.

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Revolutionary Paradigm for the Future Vision of Endodontics and Restorative Dentistry