

Case Report

Examination and Treatment Plan for Comprehensive Patient: Case Report

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ABSTRACT

Introduction: The basis of diagnosis is history and examination. The process of diagnosis begins with the collection of patient information and data. An accurate diagnosis can determine an appropriate treatment plan. The purpose of this case report is to describe the treatment plan and the course of treatment in a comprehensive patient case.

Case: A 45-year-old male patient complained of pain in the lower back right tooth when chewing. The complaint has been felt since 2 days ago with a pain scale of 6. The tooth previously had a large cavity and gradually decayed on its own. Previously there was no spontaneous pain or swollen gums. The pain is aggravated when chewing food and nothing alleviates the condition. A dentist had never seen the complaint. The patient's dental condition has root residues on teeth 18, 21, 22, 24, 26, 28, 38, and 44, pulp necrosis on teeth 12 and 48, dentin caries on teeth 11 and 23, enamel caries on teeth 17, 16, 27, 34, and 35. There are missing teeth 37, 46, and 47. The Oral Hygiene Index (OHI) has a score of 6.3, and the Plaque Index (PI) has a score of 53.5%.

Case Treatment: This patient received Dental Health Education (DHE), medication and extraction of tooth 48, scaling and root planning, dental restoration for tooth 11, and control with evaluation.

Results: Treatment was carried out over several appointments, starting with extraction of tooth 48 using inferior alveolaris nerve block technique, scaling and root planning and tooth 11 restoration with class IV GV black using composite at the last visit.

Conclusion: The treatment plan was organized and sequenced based on the urgency and chief complaint of the patient. Communication between dentist and patient is necessary to build a good relationship in the long treatment process.

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INTRODUCTION

The process of determining a patient's diagnosis commences with collecting data and information obtained through a series of methods such as inquiry, examination, observation, and diagnostic testing. These techniques offer a comprehensive understanding of the patient's condition and pave the way for an accurate diagnosis. The findings are divided into two: signs found during the examination and symptoms, which are reports from the patient, such as pain, swelling, bleeding gums, or aesthetic problems¹.

The basis of diagnosis is the history of the disease and examination. The main complaints from patients, when they come for treatment, are categorized into four, including discomforts, such as pain, swelling, or sensitivity; function, namely difficulty in chewing or speaking; social, for example, bad breath and appearance, such as the result of poor restoration or tooth discoloration. Examinations are carried out extraorally and intraorally. Extraoral include facial asymmetry, Temporomandibular Joint (TMJ), lymph nodes, and masticatory muscles, while intraoral includes the condition of soft tissue, teeth, and supporting structures².

Treatment planning is the process of arranging treatment to eliminate disease and restore normal chewing function. Predictable and long-term treatment outcomes depend on an accurate diagnosis and appropriate treatment plan^{1,3}. Rational dental care is defined as a process of making decisions about who develops the best treatment plan for the patient after evaluating all the factors involved⁴.

Several things that need to be considered in preparing a treatment plan are the patient-dentist relationship, the patient's beliefs, and attitudes towards dental treatment, the patient's age, the patient's ability to tolerate dental treatment and maintain the care provided, the patient's willingness to come for treatment and previous attendance records, considerations patient finances, as well as the dentist's ability to perform certain treatments⁵.

The treatment plan aims to eliminate or control the etiological factors, is created in response to a list of

problems, develops a series of actions that include consequences, a course of care to serve the patient's needs, and a schedule and sequence of care are outlined⁶. This also involves the patient's knowledge regarding their condition and is balanced with the doctor's skills⁷. The purpose of this case report is to describe the treatment plan and course of treatment in a comprehensive patient case.

CASE

A 45-year-old male patient complained of pain in the lower right back teeth when chewing. This complaint has been felt since 2 days ago, and it has a pain scale of 6. The tooth previously had a large cavity, and over time, it became porous on its own. There had never been spontaneous pain or swollen gums. The pain is aggravated when chewing food, and nothing relieves the condition. A dentist has never examined this complaint.

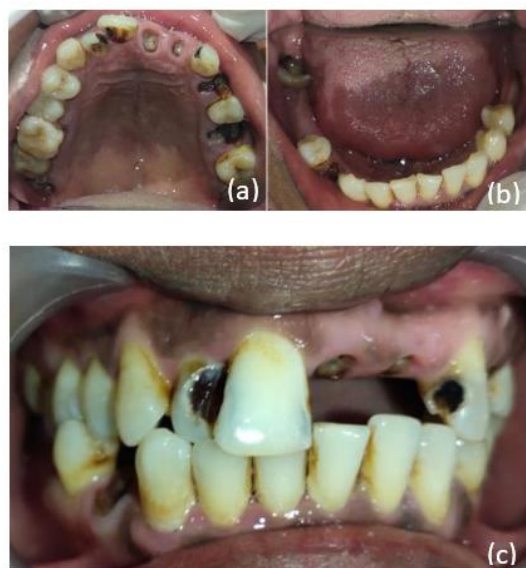
The patient had never been to a dentist before. Patient brushes their teeth 2x a day after dawn and at night before bed. The patient does not use dental floss and mouthwash. The patient has not been hospitalized for the last 1 year. The patient was not suspected of having a history of systemic disease. The patient does not have allergies to drugs or food. The patient is not taking regular medication. The patient's mother had teeth with a lot of caries. The patient's father and mother had a history of stroke. The patient consumes vegetables every day and rarely consumes fruit. The patient drinks enough water 2L/day. The patient often consumes coffee 3 times daily with 1 tablespoon of sugar. Patients smoked an average of 1 pack per day.

The patient arrived looking physically and mentally healthy and cooperative. Extraoral examination showed a functional disturbance in the form of a "clicking" sound in the right temporomandibular joint when the patient opened and closed his mouth. abnormality. There is pain in the right submandibular lymph node when palpated. Intraoral soft tissue examination revealed gingival hyperpigmentation, Fordyce granules, gingivitis, coated tongue, fissure tongue, and crenated tongue.

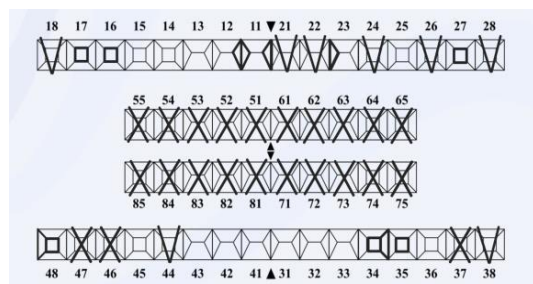
The condition of the patient's teeth has remaining roots on teeth 18, 21, 22, 24, 26, 28, 38, and 44, pulp

necrosis of teeth 12 and 48, dentin caries on teeth 11 and 23, enamel caries on teeth 17, 16, 27, 34, and 35. There are missing teeth 37, 46, and 47. The Oral Hygiene Index (OHI) scores 6,3, and the *Plaque Index (PI)* is 53.5%. The right and left molar relations 1 cannot be determined because the right and left lower molars 1 are missing. The relationship between the left canines klas 1 and right canines is klas I.

Based on the results of subjective and objective examinations, a treatment plan can be determined for this patient, namely: Information Communication and Education (KIE), medication for teeth 48, scaling and root planning, extraction of remaining roots of teeth 18, 21, 22, 24, 26, 28, 38, and 44, maintenance tooth root canal 12, tooth density 17, 16, 11, 27, 34, and 35, making dentures, as well as control and evaluation.



Picture 1. Condition of the patient's oral cavity. (a) Upper jaw, (b) Lower jaw, (c) Front view



Picture 2. Patient's odontogram

CASE TREATMENT

Patients are given communication, information, and education regarding the treatment that the operator will carry out. Treatment will be carried out in several visits. The first visit carried out extraction of tooth 48 because it was the patient's main complaint and as priority therapy. The patient's teeth felt painful during the previous examination when percussed. The Visual Analogue Scale (VAS) was 4, accompanied by lymphadenopathy.

Patients are given medication in the form of antibiotics and anti-inflammatories. At the next visit, the patient no longer complained of pain when chewing food. Based on objective examination, tooth 48 percussion (-) and palpation (-). After tooth 48 was extracted, the patient was medicated with antibiotics and analgesics. During control, the patient did not have any complaints. The patient has taken all the antibiotics prescribed. The post-extraction wound is in good condition.

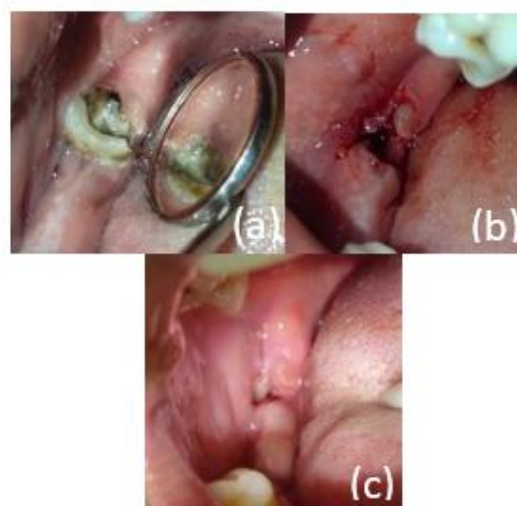


Figure 3. (a) Tooth before extraction, (b) Socket after extraction, (c) Socket after 1 week control

The following treatment carried out is scaling and root planning. The patient's OHI when he first arrived was in poor condition, and the PI was high. Objective examination showed that the gingiva was reddish in color, soft in consistency, and rounded interdental with an unstippling surface texture. There is Clinical Attachment Loss (CAL) about 4 mm and Bleeding on Probing (BOP) (+). So, the diagnosis of the case is chronic periodontitis. During control, there was still BOP (+) and CAL.



Figure 4. (a, c). Before scaling, (b,d). After scaling

The following treatment is class IV density on tooth 11. Fillings were carried out because the patient felt less confident due to his front teeth being hollow and brownish in color. Objective examination results of sondation (-), percussion (-), palpation (-), and vitality tests (+). Filling is carried out using a composite resin material.



Figure 5. (a) Before restoration, (b) After restoration

DISCUSSION

Treatment planning is carried out by sequencing the treatments to be carried out. The order of treatment may vary, but there are guidelines that can be followed in determining the treatment plan. The problem list is sorted by most problematic severe first, then ending with the lightest. Guidelines for sequencing maintenance procedures are¹:

The patient's systemic condition is treated through consultation with a general practitioner, who provides premedication, stress management, and other treatments related to the condition. Treatment of acute conditions, for example, treating infections or pain. Disease control, such as removing carious tissue to determine whether the tooth is still restorable, extraction of teeth that cannot be maintained, scaling and root planning, caries control (*Caries Risk Assessment*, definitive filling, and endodontic treatment). Definitive treatment includes occlusion

stabilization, advanced periodontal treatment, orthodontic surgery, occlusal adjustment, extraction of asymptomatic teeth, and prosthesis creation. Maintenance therapy, such as periodic visits.

Factors influencing treatment plans are grouped into patient factors and dentist factors. Patient factors include patient preferences, motivation, systemic health, emotional status, and financial capabilities, while dentist factors include the level of knowledge, experience, laboratory support, dentist-patient compatibility, availability of specialists, and functional, aesthetic, and technical requirements⁶.

In this case, the patient's dental and oral problems are complex. The patient's main complaint is pain in the lower back teeth when chewing. Based on the results of the objective examination, a deep pulp cavity was found in tooth 48 with percussion (+) VAS 4 with lymphadenopathy in the right submandibular area. The patient was not suspected of having a systemic disease but had a bad habit of smoking around 1 pack per day. Based on the guidelines above, the author performed extraction treatment for 48 teeth in the initial treatment plan. This is done to eliminate the source of infection.

The extraction of tooth 48 not only addresses the patient's primary complaint but also eliminates the source of infection. The tooth was extracted due to untreated cavities, which led to the formation of dead tissue. If left untreated, this dead tissue could have become a breeding ground for infection. The extraction procedure was carried out under topical anesthesia with benzocaine and an inferior alveolar nerve block with pehacaine.

Following the extraction, the next step in the treatment plan was scaling. This procedure involves the removal of deposits from the root surface. Additionally, root planning was performed, and a tooth root cleaning procedure was performed to remove infected tissue and necrotic tooth substances⁸. Numerous studies have demonstrated that when these procedures are carried out effectively, healing occurs and pocket bacteria are eradicated, improving oral health⁹.

The final treatment performed by the operator was a class IV GV Black composite resin restoration. Preparation is carried out using a *round bur diamond* by

removing all carious tissue and enamel not supported by dentin in the tooth area¹⁴. The application of the composite resin material is carried out on the palatal part first. It continues on the proximal side until finally, the facial part is applied *layer by layer* to reduce *polymerization shrinkage*. After that, finishing and polishing are done to smooth the tooth surface, thereby minimizing plaque accumulation, gingival irritation, poor aesthetics, surface discoloration, and secondary caries. A smooth surface is clinically significant because it determines the aesthetics and durability of the resin composite¹⁵.

CONCLUSION

An accurate diagnosis and appropriate treatment plan will provide good long-term outcomes for the patient. Communication between the dentist and patient is essential to build a good relationship because treatment is carried out over several visits. Treatment plans are dynamic, evolving in response to changes in systemic conditions, as well as the condition of the patient's teeth and mouth.

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