



## Comprehensive Interdisciplinary Treatment for a Female Patient with Complex Dental Issues: A Case Study

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### العلاج الشامل متعدد التخصصات لمريضة تعاني من مشكلات سنية معقدة: دراسة حالة

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#### Abstract:

Comprehensive interdisciplinary treatment for a female patient with complex dental issues was the focus of a recent study. The patient had a lengthy history of dental problems including multiple dental implants, root canal treatment complications, and fixed bridgework issues. The study aimed to evaluate the collaborative efforts of various dental specialists in providing effective care for the patient.

The patient's dental issues started at a young age and she underwent various treatments across different countries including tooth cleaning, root canal treatment, dental implants, and bridge installations. The research methodology included interviews, a review of medical and dental history, and physical and radiological examinations. A coordinated treatment plan involving multiple specialists was developed to address the patient's complex dental needs.

The patient underwent successful treatments such as decay management, extractions, root canal therapy, fixed bridgework, and dental implant procedures. Evaluation of treatment outcomes was conducted using standardized criteria during follow-up appointments. The patient expressed high satisfaction with the care received and reported successful integration of dental implants.

**Keywords:** Dental Implants, Tooth Extraction, Root Canal Therapy, Multidisciplinary Evaluation, and Quality of Healthcare.

#### الملخص

ركزت دراسة حديثة على العلاج الشامل متعدد التخصصات لمريضة تعاني من مشكلات معقدة في الأسنان. كان لدى المريضة تاريخ طويل من المشكلات السنية بما في ذلك العديد من زراعة الأسنان، ومضاعفات علاج قنوات الجذر، ومشاكل الجسور الثابتة. هدفت الدراسة إلى تقييم الجهود التعاونية لمختلف أخصائيي الأسنان في تقديم رعاية فعالة للمريضة. بدأت مشاكل المريضة السنية في سن مبكرة، وقد خضعت للعديد من العلاجات في دول مختلفة، بما في ذلك تنظيف الأسنان، وعلاج قنوات الجذر، وزراعة الأسنان، وتركيب الجسور. شملت منهجية البحث مقابلات، ومراجعة التاريخ الطبي والسني، وفحوصات جسدية وإشعاعية. تم تطوير خطة علاجية منسقة بمشاركة عدة اختصاصيين لتلبية احتياجات المريضة المعقدة. خضعت المريضة لعلاجات ناجحة مثل إدارة التسوس، والخلع، وعلاج قنوات الجذر، والجسور الثابتة، وإجراءات زراعة الأسنان. تم تقييم نتائج العلاج باستخدام معايير موحدة خلال المواعيد اللاحقة. عبرت المريضة عن رضاها الكبير عن الرعاية التي تلقتها وأفادت بنجاح دمج زراعة الأسنان.

**الكلمات المفتاحية:** تقييم متعدد التخصصات للأسنان، جودة الرعاية الصحية، زراعة الأسنان، علاج قناة الجذر، قلع الأسنان.

## Introduction

The field of oral and maxillofacial surgery is witnessing rapid advancements in treatment techniques and surgical interventions, significantly enhancing therapeutic outcomes and improving patients' quality of life. These techniques range from dental implants, tooth extraction, and root canal therapy, to removable prostheses, each playing a crucial role in providing comprehensive care for patients. Where dental implants, are a surgical procedure designed to replace missing teeth with artificial ones anchored into the jawbone using metal posts. Studies have demonstrated the effectiveness of this technique in restoring oral functions and improving aesthetic appearance, with success rates as high as 95% in uncomplicated cases (1). While studies show that Tooth Extraction, is a necessary surgical intervention for teeth that are severely damaged or infected beyond repair. Broken or severely damaged teeth can lead to health complications if not properly managed, highlighting the importance of extraction as a preventive and therapeutic measure (2). "Systematic Review of Dental Implant Loading Protocols. This review evaluates different loading protocols for dental implants, comparing immediate, early, and conventional loading in terms of clinical outcomes and patient satisfaction. (3). Root Canal Therapy involves removing infected tissue within the tooth, cleaning the root canal, and filling it with special materials to prevent future infections. This procedure is an effective solution for preserving natural teeth and reducing the need for extractions (4). Studies show that Removable Prostheses are replacements for missing teeth that can be easily removed and reinserted into the mouth. These prostheses provide a practical and flexible solution for patients who cannot undergo dental implants due to medical or financial reasons (5). Because of all these treatments, this study aims to provide a comprehensive evaluation of integrated treatment combining dental implants, tooth extraction, root canal therapy, and removable prostheses, focusing on the effectiveness of these procedures and their integration in delivering comprehensive patient care.

## Case study

This study focused on a 52-year-old patient with complex dental issues, including multiple dental implants, tooth extraction, root canal treatment, and removable prosthetics .

### 1- Patient Selection and Initial Assessment:

- A thorough medical and dental history was collected.
- Clinical and radiographic evaluations (e.g., panoramic images) were conducted.

### 2- Treatment Planning:

- A multidisciplinary approach involving oral surgeons, endodontists, and prosthodontists was employed.
- Treatments were sequenced based on urgency, starting with extractions, followed by root canal treatments, and then planning for implants and prostheses.

### 3- Procedural Steps:

- Tooth Extraction.: Provided post-extraction care instructions and medications.
- Root Canal Therapy.: Isolated the tooth, cleaned and disinfected the canal, filled it with gutta-percha and sealer, and restored the tooth.
- Dental Implant Placement.: Planned surgery using radiographic guides, administered local anesthesia, prepared the site, placed the implant, and provided postoperative care instructions.
- Removable Prostheses.: Took impressions, conducted bite registration and try-in sessions, delivered and adjusted the final prosthesis, and provided care and maintenance instructions.

### 4- Follow-Up and Evaluation:

- Scheduled regular check-ups to monitor healing and implant integration.
- Collected patient feedback on pain, comfort, and satisfaction.
- Conducted clinical evaluations using standardized scales to assess outcomes.

### 5- Data Analysis and Reporting"

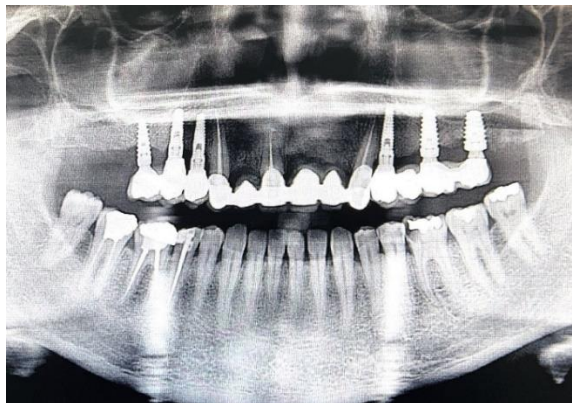
- Maintained detailed records of all procedures and follow-up results.
- Analyzed data to identify trends and success rates.
- Compiled findings into a comprehensive case report discussing treatments, outcomes, and lessons learned.

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## Discussion

The patient, a 52-year-old, has undergone extensive dental treatments over the years due to recurring dental issues. Her dental history began with a fractured left central incisor at age 7, leading to discoloration concerns. By age 16, decay affected multiple teeth, necessitating cleaning and fillings. Further complications included decay and an abscess, requiring a surgical procedure, root canal treatment, and crowning of two teeth. In 1993, a bridge was placed for the four front incisors. A visit to

England in 2005 resulted in a root canal on the mandibular right second premolar. In 2014, an endodontist in Jordan performed a root canal on the maxillary left second molar. By 2015, the patient received seven implants in the maxilla. Persistent pain and odor from the bridge in 2021 led to its replacement and further root canal treatments, including the loss of the left central incisor. Most recently, in 2024, the patient experienced molar pain, which was addressed through examination, X-ray, and treatment.



**Figure 1:** A cross-section of a patient's teeth at the Benco Clinic in 2024.

### Conclusion and Recommendations

- Regular Dental Check-ups: To prevent the recurrence of dental issues, the patient must undergo regular dental check-ups, ideally every six months.
- Enhanced Oral Hygiene: The patient should maintain rigorous oral hygiene practices, including brushing twice a day with fluoride toothpaste, flossing daily, and using an antiseptic mouthwash.
- Dietary Modifications: Avoiding sugary foods and drinks can help prevent further decay. A balanced diet rich in vitamins and minerals is essential for maintaining oral health.
- Professional Cleanings: Regular professional cleanings can help manage plaque and tartar build-up, reducing the risk of decay and gum disease.
- Immediate Attention to Symptoms: Any signs of pain, swelling, or unusual odors should be promptly addressed to prevent escalation of issues.
- Comprehensive Treatment Plans: Given the history of complex dental treatments, a comprehensive and coordinated treatment plan involving various specialists should be established for future dental care.
- Implant Maintenance: Regular follow-ups with the specialist who performed the implants to ensure their stability and health are vital.
- Patient Education: Educating the patient on the importance of adhering to treatment plans and oral hygiene practices can lead to better long-term outcomes.
- Acknowledgment
- I would like to extend my gratitude and appreciation to all the doctors and supporting medical staff in the countries where the patient received treatment. Your advanced care and attention have been invaluable.

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