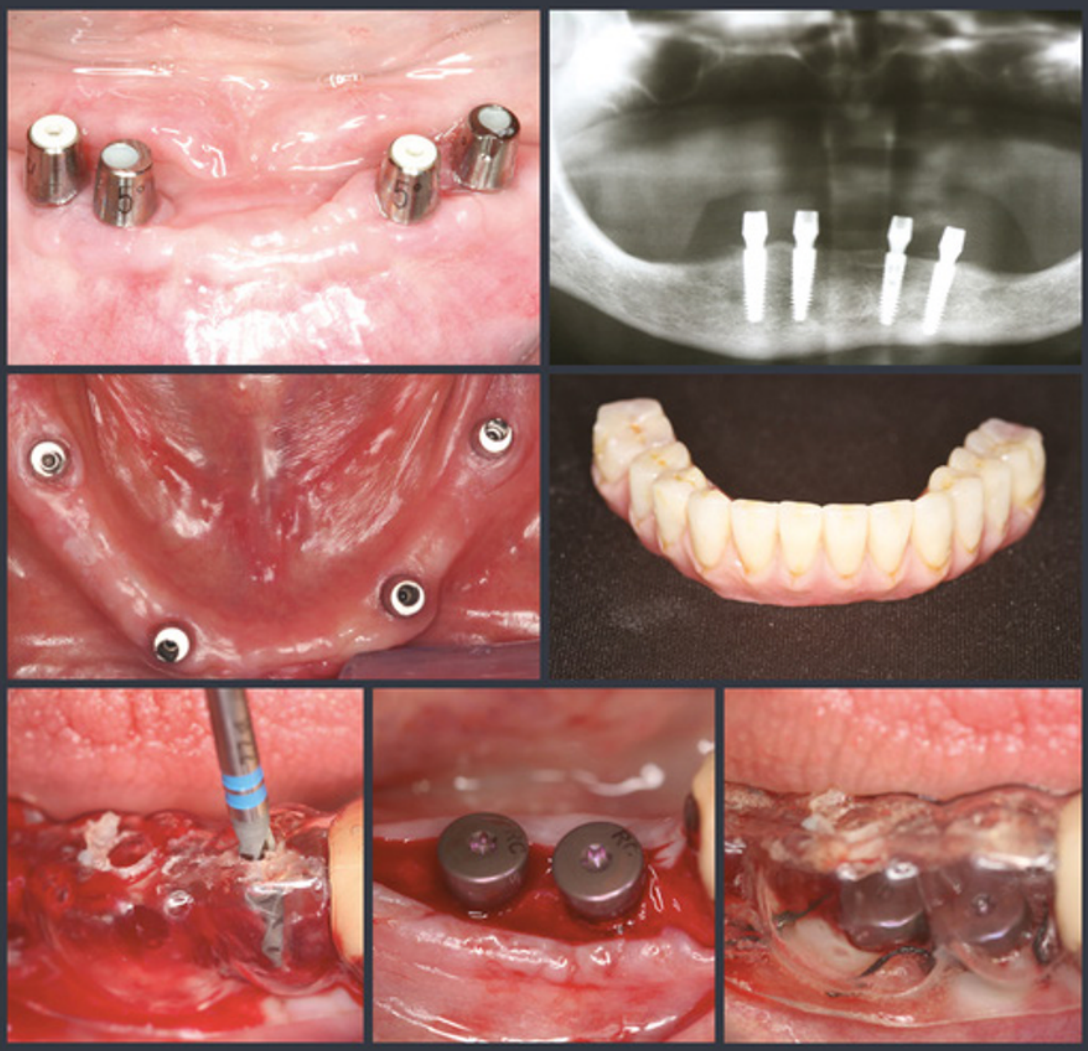
Evidence-based Implant Dentistry and Systemic Conditions

Fawad Javed and Georgios Romanos



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“I dedicate this book to my beloved wife, Dr. Hameeda Bashir Ahmed, and children, Sara Fawad and Rayan Fawad, for their endless love and support.”

Fawad Javed

"To the love of my life, my partner in life adventures, my wife, Enisa, and our sweet little girl, our best creation, Stella Romanos."

Georgios E. Romanos

Contents

Preface

The use of dental implants for the oral rehabilitation of partially and completely edentulous individuals is increasing. With advancements in modern implant dentistry, the use of dental implants is not restricted to medically healthy individuals. Studies have reported that dental implants can osseointegrate and remain esthetically and functionally stable for prolonged durations in medically compromised patients (such as patients with acquired immune deficiency syndrome and diabetes mellitus) in a manner similar to systemically healthy individuals.

The fundamental theme of this book, *Evidence-based Implant Dentistry and Systemic Conditions,* is to base the oral rehabilitation of complete and partial anodontia using dental implants in patients with systemic diseases. In this book, each chapter is dedicated to a specific medical condition and its impact on the success and survival of dental implants. Pathophysiology of systemic diseases and their impact on osseointegration and bone loss around dental implants is discussed. Moreover, besides systemic conditions, this book describes how oral diseases such as history of periodontitis and oral cancer may affect the success and survival of dental implants, as well as the influence of habits (such as tobacco smoking and smokeless tobacco) on the outcome of dental implant therapy. In addition, several clinical and radiographic illustrations have been provided in the chapters to detail related concepts.

All chapters have been inked after a careful review of original and review articles published in indexed medical and dental journals. Every chapter is carefully blended to be consistent in aims/objectives to provide a foreseeable outcome.

From a clinical standpoint, this book is expected to provide an overview of the expected outcome of dental implant therapy in medically challenged patients; however, it also opens doors for further research in implant dentistry. In this regard, this book can be beneficial for students, postgraduate residents, clinicians, and researchers in dental and medical sciences.

1

Introduction

For centuries, dental practitioners have relied on partial dentures, complete dentures, and fixed prosthesis (such as bridges) for the replacement of missing teeth. Dental implants have revolutionized modern clinical practice and are a contemporary substitute to such traditional fixed and removable dental prosthesis. It is well known that dental implants can osseointegrate and remain functionally and aesthetically stable over long durations in patients with missing teeth. Studies have reported high success and survival rates of dental implants in systemically healthy individuals; however, dental implant therapy has also been reported to be successful among patients with systemic disorders, such as diabetes mellitus and acquired immune deficiency syndrome (AIDS).

This book provides essential information on the osseointegration and survival of dental implants in medically challenged patients. In this book, we compiled studies from indexed databases (including PubMed, MEDLINE, ISI web of knowledge, Scopus, and EMBASE) with reference to their impact on the survival and success of dental implants. These studies have formulated into individual chapters focusing on specific focused questions and data has been presented using a systematic review approach. The content of this book is centered on evidence-based dental implant therapy among patients with systemic diseases. Moreover, each chapter discusses the outcomes of the respective studies and recommendations for future research are also presented.

Evidence-based Implant Dentistry and Systemic Conditions, First Edition.
Fawad Javed and Georgios E. Romanos.

2

Evidence-Based Grading of Studies

This book follows an *evidence-based grading* approach in order to make judgments about quality of evidence and strength of the study/studies included in each chapter. This approach will give researchers, clinicians, and students a clear overview of the level of scientific evidence relating to each chapter. This grading system is based on the methodology adopted across studies.

Level of Evidence Grade	
A	Evidence from randomized controlled trials
B	Evidence from at least one randomized controlled trial
C	Evidence from at least one well designed case-control study
D	Evidence from at least one well-designed clinical study that was not randomized
E	No evidence

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3

Dental Implants in Adult Patients with Autism Spectrum Disorders

Introduction

Autism spectrum disorder, or ASD, is a group of developmental disorders that includes a variety/spectrum of symptoms, skills, and levels of disability (Scott et al., 2017). Patients with ASD usually have these characteristics: (a) Ongoing social problems such as resistance to communication and interaction with others; (b) repetitive behaviors and limited interests or activities; (c) Symptoms that hurt an individuals' ability to function in various areas of life (Scott et al., 2017). The precise etiology of ASD remains unclear; however, a number of risk factors have been associated with the etiology of ASD. These include genetic factors (genetic differences associated with the X chromosome), neurobiological factors (problems with genetic code development involving multiple brain regions), and environmental factors (exposure to drugs and environmental toxicants) (Abrahams and Geschwind, 2010; Coe et al., 2012a; Coe et al., 2012b; Landrigan et al., 2012).

A compromised oral health status has been reported in adult patients with ASD. In a study from Sweden, dental caries and periodontal health status were assessed among 47 adults with ASD and 69 age- and gender-matched controls (Blomqvist et al., 2015). The results showed a significantly reduced stimulated salivary flow rate among patients with ASD as compared to controls. Buccal gingival recession was more often manifested in patients with ASD than controls (Blomqvist et al., 2015). Although there was no statistically significant difference in dental caries among patients with and without ASD, the authors hypothesized that adults with ASD are more susceptible to dental caries than healthy adults, most likely as a consequence of a reduced salivary flow rate in ASD adults (Blomqvist et al., 2015). However, in another study, a statistically significant association was reported between ASD and the prevalence of dental caries. Other oral manifestations among adults with ASD are bruxism, self-perpetrated oral lesions, and dental malocclusions (most commonly anterior open bite) (Orellana et al., 2012).

Materials and Methods

Focused Question

Can dental implants osseointegrate and remain functionally stable in patients with ASD?

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