牙科现代疗法（第七卷）

# Current therapy in dentistry Volume seven

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*With 675 illustrations*

The C. V. Mosby Company

ST. LOUIS • TORONTO • LONDON 1980

**VOLUME SEVEN**



Printed in the United States of America

The C. V. Mosby Company
11830 Westline Industrial Drive, St. Louis, Missouri 63141

**Library of Congress Cataloging in Publication Data** (Revised)
Main entry under title:

Current therapy in dentistry.

Includes bibliographies and index.
1. Dentistry—Collected works. 2. Therapeutics, Dental—Collected works. I. Goldman, Henry Maurice, 1911- ed. [DNLM: 1. Dentistry—Period. W1Cu819]
RK24.C87 617.6 64-23943
ISBN 0-8016-1189-X

GW/CB/B 9 8 7 6 5 4 3 2 1 05/D/605

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# Contents

Section I

# ORAL MEDICINE

**Edited by William C. Hurt**

Classically *oral medicine* has related oral disease and systemic disease. The term implies total health care for the individual patient and establishes a common meeting ground for dentist and physician. There is not now, nor has there ever been, a dichotomy of oral disease versus systemic disease. All oral disease has its systemic overtones and most systemic disease affects the oral cavity to one degree or another.

The intent of the Oral Medicine section of *Current Therapy in Dentistry*, Volume seven, is to provide information relative to old and new areas of concern. An attempt has been made to include basic biologic data so therapy may be approached in a rational rather than a "cookbook" fashion. The section has been constituted, in part, to take a clinical entity that poses a problem in therapy and to develop the more recent concepts relating to its management.

Admittedly each topic selected will not enjoy universal appeal among those who elect to read this volume; nevertheless, I hope there is enough diversity within the section to warrant the attention of most practicing dentists.

It is a distinct privilege to be asked to edit a section that has been under the aegis of Dr. Henry M. Goldman. Dr. Goldman's contributions to dentistry are so profound that one who seeks to follow him in any labor cannot escape a sense of inadequacy. The high standards Dr. Goldman set will always provide a measure for quality.

Chapter 1

# Dental management of the medically compromised patient

Terry D. Rees

Dentistry in the United States is among the safest of all health-delivery systems. Few serious life-taking or life-threatening instances occur in the dental operatory, and most dentists can anticipate a lifetime of practice without experiencing a serious medical emergency. There are many reasons for this:

1. The modern dental environment is less stressful than in the past.
2. The dentist is trained to provide dental care as a part of comprehensive health care for the patient.
3. The dentist is trained to recognize early signs and symptoms of patient distress and to take action to alleviate this distress.
4. The dental patient in the United States is possibly one of the healthiest patients in the world.

Conversely, an increasing number of dental patients are known to suffer from medically compromising conditions. In part, this results from the heightened quality of medical diagnostic and treatment techniques. For example, the dentist is far more likely to treat a known hypertensive patient today than in years past. The incidence of hypertension is not necessarily increasing—rather the criteria for defining hypertension are more stringent and are combined with more refined techniques of treatment and an increased emphasis on detection.

Many patients who are seriously ill require dental treatment. This need has been recognized by the dental profession; and there is a significant increase in hospital dentistry performed throughout the United States. Additionally, many health care professionals are being dually trained as both physicians and dentists. At present, however, there are not enough hospital dental programs to manage all medically compromised patients nor is it necessary that all such patients be treated in the hospital environment. The practicing dentist must often provide outpatient care to medically compromised patients. In most instances this can be safely and effectively accomplished with only minimal modification to normal treatment routines. Yet, at the same time, dental care should not be provided to such patients without regard to their systemic condition.

The incidence of dental patients' presenting with significant medical findings is surprisingly high. In two separate studies involving 1,035 adult periodontal patients, Brasher and Rees[4,65] found that 43% of patients suffered concomitantly from systemic conditions which could necessitate modification of treatment. Suomi and associates[80] screened adult dental patients in a similar manner and found even higher percentages who were potentially medically compromised. More recently Oksas[61] evaluated 2,418 patients participating in a dental drug study at the University of California School of Dentistry. Of these, 730 (30.2%) suffered from a significant chronic systemic condition whereas 23.4% gave a past history of drug reaction,

many involving commonly used dental medications. Other authors have reported similar findings.

Several authorities have stressed the importance of routine screening for hypertension in dental offices and in dental schools. Such screening results in the detection of a significant number of patients who suffer from hypertension yet are either unaware of it or not under adequate treatment. Findings of this nature emphasize the role of the dentist in comprehensive health care for his patients. Increasingly there are reports of successfully litigated malpractice claims against dentists whose patients have unnecessarily experienced adverse physical reactions in connection with dental treatment. These factors demand that the dentist identify and properly manage the medically compromised patient.

A medical history is essential as a screening mechanism. Deryck[23] has offered evidence to suggest that even a brief medical history questionnaire is of considerable value. Other authors, however, note that a brief form may provide inadequate information about the patient. It has also been suggested that an extremely long medical history questionnaire may be less than effective since the patient may become tired, bored, or confused and consequently careless in his completion. Additionally, the dentist may not be able to adequately evaluate all the data accumulated in a long form.

As a minimum the medical history-taking process should include a written questionnaire that obtains data regarding general health status; current medical treatment; and past history or signs or symptoms of cardiovascular disease, bleeding abnormalities, allergies, hormonal imbalances, neurologic disturbances, chronic respiratory conditions, gastrointestinal disturbances, and liver or kidney disease. Information should also be obtained regarding possible pregnancy in female patients. In addition, all prescription or nonprescription drugs the patient may be taking should be listed.

Many excellent medical history questionnaires have been developed, and examples are offered in most oral medicine testbooks. The dentist should modify a questionnaire according to specific needs. If the performance of surgical, periodontal, or endodontic procedures is anticipated, obviously more information will be needed regarding the ability of the patient to withstand the experience.

Regardless of the type of medical history questionnaire used, supplementation with a verbal interview is desirable. Verbal questioning will often disclose information that the patient did not believe was important enough to record on the questionnaire or that "was not asked."

Physical evaluation should be routinely performed in the dental operatory to include the taking of blood pressure and pulse rate. Laboratory tests should be requested if the patient's history or physical findings suggest the need for such tests.

Medical consultation is most important in managing the medically affected patient or the patient suspected of suffering from an undiagnosed systemic disorder. To benefit from medical consultation, the dentist must ensure that the physician understands why the patient is being referred, what the physical and laboratory screening results are, and what the nature of the dental treatment to be performed is. It is usually not productive to refer a patient for a general physical examination.

A meaningful response to a medical consultation request can usually be obtained if the following information is provided:

Patient identification
Pertinent history
Patient's oral conditions
Anticipated dental treatment
Patient's systemic signs and/or symptoms
Available laboratory data
Tentative diagnosis
Specific requests

By following the principles outlined (i.e., adequate medical history, adequate physical evaluation, and proper use of laboratory screening examination and medical consultations), the dentist can generally obtain sufficient data to determine whether dental treatment can be safely performed within his practice. In most instances, little alteration of the usual treatment will be required. Occasionally, however, one encounters a medi-

cally impaired patient for whom only absolutely essential care should be performed and then only in the hospital environment by specially trained personnel.

The discussion to follow will be limited to care for medical patients who usually can and should be treated in the dental office.

## CARDIOVASCULAR DISEASE

One and one half million Americans suffer heart attacks annually. Although cardiac emergencies rarely occur in the dental office, the dentist must nevertheless be prepared to manage them. Profile analysis of the cardiac-risk patient includes factors like smoking, obesity, improper diet, lack of exercise, untreated hypertension or diabetes, heredity, and emotional stress. Dentists also have a responsibility for identifying signs and symptoms of heart disease in their patients and referring such individuals for medical evaluation.

The patient who presents for dental treatment with a concomitant cardiovascular disorder may require significant alteration in the dentist's routine approach to treatment. The practitioner must consider the potential effect on treatment of drugs the patient may be taking, the significance of dental infection to overall health, and the degree of stress involved in required dental treatment. General anesthesia may present a particular risk for such patients, and medical consultation is usually necessary.

Coronary insufficiency may be defined as inadequate blood circulation to the heart. It is manifested as angina pectoris or myocardial infarction. Angina pectoris is a clinical syndrome characterized by temporary chest pain due to the insufficiency, usually brought on by exertion or emotional stress, and lasting not longer than 20 minutes. Myocardial infarction is death of cardiac muscle tissue due to severe cardiac insufficiency or coronary occlusion. Such an occurrence may be precipitated by atherosclerosis, aortic valvular disease, aneurysm, or tachycardia. Symptoms include a viselike gripping pain of the chest and pain radiating down the left arm on the side of the fourth and fifth fingers. Interestingly, pain occasionally radiates to the jaws as well.

### Angina pectoris

The patient who suffers from angina pectoris usually can receive dental treatment if the following precautions are taken:

1. Consult with the patient's physician on whether there are any reservations regarding the patient's condition.

2. Minimize the patient's apprehension. Hentschel et al.[38] have suggested that patients can be questioned regarding the aspect of treatment they find most disturbing and measures can be initiated to avoid or reduce those particular problem areas. As a minimum, excessively long or traumatic procedures should be avoided and the dentist and his auxiliaries should strive to maintain an overall atmosphere of calm in the operatory. Presedation is often desirable for stressful procedures. Oral barbiturates such as secobarbital may be used, 50 to 100 mg the night before and 30 to 45 minutes prior to treatment. As an alternative, diazepam may be used, 5 to 10 mg orally the night before and intravenously prior to the procedure. It is important to note that sedatives of the nature described alter the reflexes and the patient should be accompanied on his dental appointment by someone to assist him upon departure.

3. Use local anesthesia. This is preferable to general anesthesia under most circumstances. Some authorities believe no vasoconstrictor should be used in patients with cardiovascular disease. However, a local anesthetic with 1:100,000 concentration of epinephrine is usually more profound, serving to minimize both patient apprehension and the release of endogenous epinephrine. Use an aspirating syringe and be cautious to avoid intravascular injection. Always consider the potential interaction of the local anesthetic agent with any other drugs the patient may be taking. Vasoconstrictors should *not* be used for gingival retraction or hemostasis in patients with any cardiovascular condition predisposed to the development of arrhythmias.

4. Nitroglycerin should be available and used as directed by the patient's physician. The patient's own nitroglycerin should be used if possible. Some authorities advocate premedication with the patient's nitroglyc-