

General and Oral Pathology
for the
DENTAL HYGIENIST

Third Edition

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To my friend and coworker Patti Harrigan Parrott, Dental Hygiene Program Director at Lamar Institute of Technology, who lost her battle with cancer October 19, 2015. She taught and lead by example; her immense capacity for love and patience and her limitless faith in God and the goodness of mankind was reflected in her daily interactions with friends, coworkers, students, and everyone she came into contact with. She embraced every day and lived it to the fullest reminding all of us who knew her that life is fleeting and precious and we should treasure every day.

I also dedicate this edition to all my past and present dental hygiene students. I am honored to have played a part in your education and have enjoyed watching you grow not only as adults but as professional dental hygienists. You have provided me with an education second to none and I thank you.

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PREFACE

General and Oral Pathology for the Dental Hygienist, Third Edition, is a comprehensive study of the general concepts of pathophysiology as they relate to systemic and oral conditions. The material is organized to provide students and practicing clinicians with the information they need in an easy to use format.

Chapter 1 is an overview of the head and neck and intraoral (cancer screening) examinations and the process of describing and documenting positive findings. Each element of a complete clinical and radiographic description is discussed including appropriate terminology, definitions, and images illustrating most of the terms. Documentation is explained in a clear and concise manner with ample opportunities for practice. Students will find this chapter an excellent supplement or reference for their preclinical and clinical courses, and practicing clinicians will find this chapter to be an excellent review for refining their skills. The concept of oral medicine is defined, and its significance to the practice of dental hygiene is discussed.

Chapters 2, 3 through 4 cover the basics of pathology, inflammation and repair, and the immune system and are essential for understanding the remaining general and oral pathology chapters. Chapter 5, Neoplasia, continues coverage of basic pathology with a discussion of normal cell growth and regulation versus neoplastic cell growth, the process of carcinogenesis, cancer therapies, and description and discussion of various types of cancer. Chapter 6, Developmental, Genetic, and Congenital Disorders, completes coverage of the pathologic basis of disease with a brief discussion of these topics, including morphogenesis, teratology, overview of genetic concepts, and a description of the various types of disorders using specific conditions as a basis for discussion.

Chapters 7, 8, and 9 discuss disorders grouped into the following categories: Chapter 7, Endocrine Disorders; Chapter 8, Blood Disorders; and Chapter 9, Gastrointestinal, Neurologic, and Skeletal Disorders. This quasi systems approach, whereby different systems are looked at from the viewpoint of a practicing dental hygienist reviewing a medical history, provides the student with a clear description of the pathogenesis of these conditions along with dental implications and treatment protocols. This information cannot only be used in an oral pathology course but can also be used in clinical and preclinical courses and in courses dealing with treatment of medically compromised patients.

The second part of the book focuses on oral pathology. In accordance with ADEA Curriculum Guidelines, which stress the recognition of oral disease based on clinical signs and symptoms, the oral pathology section is uniquely organized by distinct clinical/radiographic features of oral lesions to help students evaluate and categorize lesions according to appearance, emphasizing the concept of differential diagnosis. Chapters 10, 11, 12, 13, 14, 15, 16, 17, 18, and 19 are separated into observable clinical or radiographic characteristics such as color (red or purple, white, pigmented), surface texture (rough or papillary), whether they are depressed (ulcers) or elevated (vesicles, soft or hard tissue enlargements), and finally whether they are radiolucent or radiopaque. This classification scheme becomes the first step in developing a differential diagnosis. In addition, it limits the number of conditions in each category, does not require the student or clinician to sift through numerous dissimilar lesions to get to the lesion most likely present, and gives the student or clinician something concrete to associate each lesion/condition with increase retention of the information.

Chapter 20 focuses on tooth abnormalities and associated conditions and can be used to augment information in an oral anatomy and histology class as well as oral pathology classes. Chapter 21 provides in-depth coverage of oral lesions associated with HIV infection and AIDS including dental implications and current treatment options.

Chapter 22 is an excellent reference for identifying common cutaneous lesions seen during a head and neck examination. This information will be useful in determining a differential diagnosis and deciding on referral options for patients who present with skin lesions.

General and Oral Pathology for the Dental Hygienist includes many unique features created to enhance learning and provide opportunities for the practical application of information learned. These features include the following:

- 1. Key Terms.** Key terms are listed at the beginning of the chapter and are bolded and defined within the text. In addition, each term is listed in a comprehensive glossary at the end of the book.
- 2. Learner Objectives.** Learner objectives, located at the beginning of each chapter, help students focus on the key elements of material in the chapter.
- 3. Chapter Outline.** Each chapter begins with an outline to make locating material within the chapter easier.

- 4. New! Oral Medicine Considerations.** In alignment with current ADEA Curriculum Guidelines, recommendations stressing the relationship between oral and systemic disease, the concept of oral medicine is defined, and oral medicine considerations for each condition or group of conditions are highlighted throughout the text.
- 5. Disease Lists.** The information related to specific oral and systemic diseases/conditions is organized in a similar manner throughout the book. The template facilitates the learning process by allowing students to study the material in an organized fashion. The information is organized into the following categories:
- *Name.* The most common names and some of the less common or outdated names of the disorders are listed enabling the student to identify them when necessary.
 - *Etiology.* The etiology of each disorder, if known, is identified in this section. In instances where the etiology is unknown, the prevailing theories of the etiology may be stated with information on the current focus of research.
 - *Method of Transmission.* This section contains a concise description of how the disorder is transmitted; if appropriate, this includes the method of transmission of infectious organisms and inheritance patterns or genetic transmission.
 - *Epidemiology.* Basic statistical information, such as incidence and prevalence, and information about the epidemiological aspects of each condition, such as age, sex, ethnicity, and geographical location, are essential for students to know in order to understand the disorders and to develop an appropriate differential diagnosis for a patient.
 - *Pathogenesis.* Students need to know the why and the how of the disorders they are learning about in order to understand how the concepts of pathophysiology relate to them. As the students understand more, less memorization will be required. This section focuses on a brief description of how the disease/condition develops, detailing what happens on a cellular, tissue, or organ level and how the general health of the individual is affected.
 - *Extraoral Characteristics.* Dental hygienists treat patients who present with a myriad of health problems. In order to properly assess patients and plan for appropriate dental hygiene care, the modern hygienist must be familiar with signs and symptoms of disease present in any area of the body. Clinically observable characteristics associated with the lower and upper body, and the head and neck area are described in this section.
 - *Perioral and Intraoral Characteristics.* The perioral and intraoral manifestations of each disorder are comprehensively described in this section. In many instances, these manifestations are linked to systemic manifestations. As stated previously, lesions with similar perioral and/or oral characteristics are grouped together in the chapters dealing with oral lesions.
 - *Distinguishing Characteristics.* This section identifies manifestations and sometimes microscopic or radiographic features that may only be associated with a specific disorder or group of similar disorders. This information is useful when developing a differential diagnosis.
 - *Significant Microscopic Features.* Many of the conditions include a description of the histological appearance of the affected tissues and/or cells that can be crucial in helping students understand the pathological basis for the disorder. In addition, it is important for the student to know that microscopic examination is our only means of obtaining a definitive diagnosis for most lesions.
 - *Dental Implications.* This section focuses on patient management issues associated with the specific diseases/conditions. Information related to patient assessment, treatment modifications, potential medical emergencies, homecare recommendations, and other topics enables the student to be conscious of not only the specific disorder but also the impact the disorder may have on dental/dental hygiene treatment and on the individual's ability to perform self-care procedures.
 - *Differential Diagnosis.* A differential diagnosis has been developed for many of the disorders. The differential diagnosis includes the names of disorders with similar manifestations and a reference to the chapter that discusses these disorders. Sometimes a brief explanation is included about why the condition is listed in the differential diagnosis. This is an excellent clinical reference for students and practicing clinicians.
 - *Treatment and Prognosis.* The discussion of each disease/condition concludes with possible treatment methods and the prognosis associated with the disorder. The dental implications of specific therapeutic regimens may also be described in this section.
- 6. Applications.** Applications are specific for each chapter and show how content translates to the real world (Application to Practice) or provide information on current trends (Did You Know? and Research in Action).
- 7. Chapter Summary.** Key points are summarized in a bulleted list at the conclusion of each chapter. The bullet points can be used to start discussions or help with self-study for examinations.

Chapter Review Section

- **Case Studies.** The case studies associated with each chapter were developed to encompass all aspects of dental hygiene care and require the student to “put it all together.” There are at least two case studies included in

the text for each chapter, one introductory or basic case and one more advanced case. Both levels will challenge the student to use critical thinking to discover the answers; the more advanced cases may assume the student knows information not found in the chapter or may require some outside research to complete.

- **Critical Thinking Activities.** These activities are included in each chapter and encourage the student to reach beyond memorizing the material to develop problem-solving skills and to consider how the information will impact their practice of dental hygiene. These can be used to facilitate classroom and online discussions and could be used as a basis for a group project.
- **Media Menu Resources.** Each chapter contains a representative sample of the Internet resources found online at “thePoint” that can be accessed to enhance information included in the chapter. These include YouTube video clips illustrating various aspects of cellular pathology and other topics that may be of interest, as well as sites representing organizations such as The American Cancer Society and government sites such as The Centers for Disease Control and Prevention.
- **Review questions.** Each chapter contains review questions in national board format that cover the major points in the chapter, enhance learning, and help guide study.

Student Resource Center

The Student Resource Center on thePoint includes *Clinical Protocols eBooklet*, *Condition Summary eBooklet*, review questions, additional case studies, and answers to the text case studies associated with each chapter.

- **Clinical Protocols.** References to numbered Clinical Protocols are made throughout the book and at the beginning of each chapter. The nearly 30 clinical protocols, written by experts in the field, address the management of specific clinical or patient problems. They are excellent practice guidelines and references for the student and/or practicing clinician. The *Clinical Protocols eBooklet* can be found online at “thePoint.” It is fully searchable and can be downloaded and/or printed.
- **Condition Summary eBooklet.** A searchable and printable *Condition Summary eBooklet* provides quick access to the most important information about the conditions discussed in each chapter, acting as both a resource and a study reference.
- **Review questions** provide the student with the opportunity to check their understanding of the material in each chapter. Each question includes rationale for the correct answer as well as the rationale for why other choices are incorrect. Questions are formatted using the new Dental Hygiene National Board guidelines including multiple–multiple choice, ordering and matching questions, as well as the traditional multiple choice questions with five distractors.

- **New! An Interactive Case Study engine** helps students hone critical thinking skills and prepare for practice with Additional Case Studies (at least two for each chapter) that are different from the cases found in the book.
- **Answers to each of the case studies in the text** are available by using the same Interactive Case Study engine. Students can check their ability to apply the information learned in the chapter and to prepare for case studies they may encounter in an examination.
- Extensive list of online resources that builds on the sample list seen in the chapter review section of the book. The student can utilize these resources to clarify concepts, acquire more in-depth information, obtain patient education materials, and more.

See the inside front cover of this text for more details, including the passcode you will need to gain access to the Web site.

Instructor Resource Center

The Instructor Resource Center on thePoint has numerous aids for instructors:

- Detailed **PowerPoint presentations** are available for each chapter. The presentations may be modified to address the needs of the individual instructor.
- An **image bank** containing all of the images included in the text is available for use in classroom presentations or instructor-developed PowerPoint presentations.
- An **expanded list of the media resources** (including links to videos and animations) from each chapter’s Media Menu facilitates using these resources for in-class presentations to explain concepts covered in chapters.
- At least **two additional case studies** (one basic and one more advanced) are included with each chapter and may be used for quizzes, tests, or classroom or online discussions.
- Instructors have access to **discussion points for the Critical Thinking Activities** listed at the end of each chapter. The critical thinking activities can be used to start a classroom or online discussion or may be used as the basis for a group project. The discussion points give the instructor guidance for facilitating a discussion or the basis for evaluating a discussion or project.
- **Test bank questions** can be used to generate quizzes, tests, and final examinations. The questions are formatted according to Dental Hygiene National Board standards and include the same type of traditional multiple choice, multiple–multiple choice, ordering and matching questions that have been provided to the students.

The authors have endeavored to provide a comprehensive text that is user friendly and flexible enough to be adapted for use in dental hygiene education from the Associate degree to Master degree level. We feel confident you will be pleased with our efforts.



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