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12-2017

# Clinical Cases in Endodontics; Chapter 1: Introduction

Takashi Komabayashi

*The University of New England*, [tkomabayashi@une.edu](mailto:tkomabayashi@une.edu)

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## Recommended Citation

Komabayashi, Takashi, "Clinical Cases in Endodontics; Chapter 1: Introduction" (2017). *Dental Medicine Faculty Publications*. 9.  
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# 1

## Introduction

*Takashi Komabayashi*

### LEARNING OBJECTIVES

- To understand the purpose, special features, and benefits of this book.
- To understand the scope and approach of each chapter.
- To understand the terminology and common frames of reference used.

Copiously illustrated in full color, *Clinical Cases in Endodontics* brings together actual endodontic clinical cases chosen by national and international master clinicians and leading academics, building from the simple to the complex and from the common to the rare. Part of the Wiley-Blackwell Clinical Cases series, and with cases ranging from nonsurgical root canal treatment to complicated therapy, this book presents practical, everyday applications accompanied by rigorously supported academic commentary in a unique approach that questions and educates readers about essential topics in clinical endodontics. The format of *Clinical Cases in Endodontics* fosters case-based, problem-based and evidence-based independent learning and prepares readers for case-based examinations. It is, therefore, useful as a textbook from which predoctoral dental students and postgraduate residents may learn about the challenging and absorbing nature of endodontic treatment. However, the book's range and depth of detail will also make it an excellent reference tool for practitioners whenever perplexing cases arise in the dental office.

Each chapter provides a brief recap of key theoretical concepts, situates cases within the framework of standard protocols, and considers the advantages and disadvantages of the clinical regimen. This approach enables student readers to build their skills, aiding their ability to think critically and independently. However, by simulating a step-by-step visual presentation, this book also facilitates development and refinement of technique regardless of one's years of experience in endodontic treatment. *Clinical Cases in Endodontics* will make all readers more confident in their understanding of endodontic treatment.

### Composition of each Chapter (Chapters 2 to 25)

*Clinical Cases in Endodontics* adheres to the same four-part structure for each chapter.

#### 1. Learning Objectives

Each chapter opens with a statement of learning objectives for that chapter, a format familiar from course syllabi at many dental schools or dental continuing education courses.

#### 2. Clinical Case (With Radiographs and Pictures)

The focus of each chapter is a single case, presented in the case-based format of the American Board of Endodontics (ABE) Case History Exam. Since this book is intended for dental students and general dentists, as well as endodontic residents and endodontic specialists, the level of case difficulty may not be the same as that reflected in the ABE Case History Exam. All cases are real cases, however, chosen by master

clinicians and/or leading academics for uniqueness and complexity. Overall, the level of difficulty is high.

The following are common guidelines used by all authors for each chapter.

- The dental notation system in this textbook is the “Universal Tooth Designation System” used in the United States (i.e., tooth #1 to #32). If you are a student/resident/dentist outside the United States, it is likely that your country/region is using a different tooth designation system, such as the International Standards Organization designation system (ISO System) by Fédération Dentaire Internationale (FDI) World Dental Federation or Palmer method. International readers may consult Figure 1.1 to see how these systems relate to one another. International coverage and perspectives will be sought. The Pulpal & Apical Diagnostic Terminology (Figure 1.2) used in this textbook follows that published in the December 2009 special issue of the *Journal of Endodontics*. Also consulted were *Mosby’s Dental Dictionary* (Mosby 2013) and *Dentistry at a Glance* (Kay 2016).
- In each chapter, text, radiographs and pictures, including many follow-up radiographs and clinical photos, combine to provide sufficient and necessary detail for understanding each case. Taken together, the individual cases demonstrate the full scope of the field of endodontics.
- Unlike other endodontics textbooks, each chapter provides a detailed history, diagnosis, and treatment procedures for the case described. The case series focuses on using critical thinking and analysis to merge concepts and actual patient treatments.
- *Clinical Cases in Endodontics* uses a case- and evidence-based format throughout, with appropriate citations and references.

**Structure of clinical cases**

- Chief Complaint
- Medical History
- Dental History
- Clinical Evaluation (Diagnostic Procedures)
  - Examinations (Extra-oral and Intra-oral)
  - Diagnostic Tests (Summarized in Table)
  - Radiographic Findings
- Pretreatment Diagnosis
  - Pulpal
  - Apical
- Treatment Plan
  - Recommended
  - Alternative

- Restorative
- Prognosis (Favorable, Questionable, or Unfavorable)
- Clinical Procedures: Treatment Record
- Post-Treatment Evaluation

**3. Five Self-Study Questions**

The self-study questions will be useful at all levels to assess mastery of the concepts and techniques set forth in the chapter. A student might use them in studying for midterm and final exams at a dental school or residency program, an endodontic resident might use them to prepare for a mock oral examination, or an endodontist to prepare for board examinations. The self-study questions may also serve as an abstract and publications writing tool for endodontic professionals.

**4. Answers to the Five Self-Study Questions (With References)**

A full answer is provided for each self-study question, backed up by references to peer-reviewed publications (original articles and review articles).

**Benefits of this book**

*Clinical Cases in Endodontics* is not just another “how you do things” textbook. Nor is it simply a series of “good-looking root canals.” In addition to the stimulus of a step-by-step visual (photographic) presentation, similar to the ABE examinations, explanations of treatment modality and clinical background are supported by contemporary, evidence-based research. Cases include the whole scope of endodontics treatment, including medical and dental history, examination and diagnosis, treatments, and outcome assessments. The unique combination of breadth and depth gives rise to numerous benefits for a wide range of dental students, residents and endodontic practitioners. The book:

- supports analysis of problem etiology and application of critical thinking;
- fosters comparison and evaluation of alternative approaches, with rationales for plans of action and predicted outcomes;
- creates a simulation-type environment in which students/residents/dentists may engage in decision-making;
- allows for retrospective critiques of cases to identify error and its causes, as well as recognition of exemplary performance;
- encourages analysis and discussion of students’/ residents’/ dentists’ work products in comparison

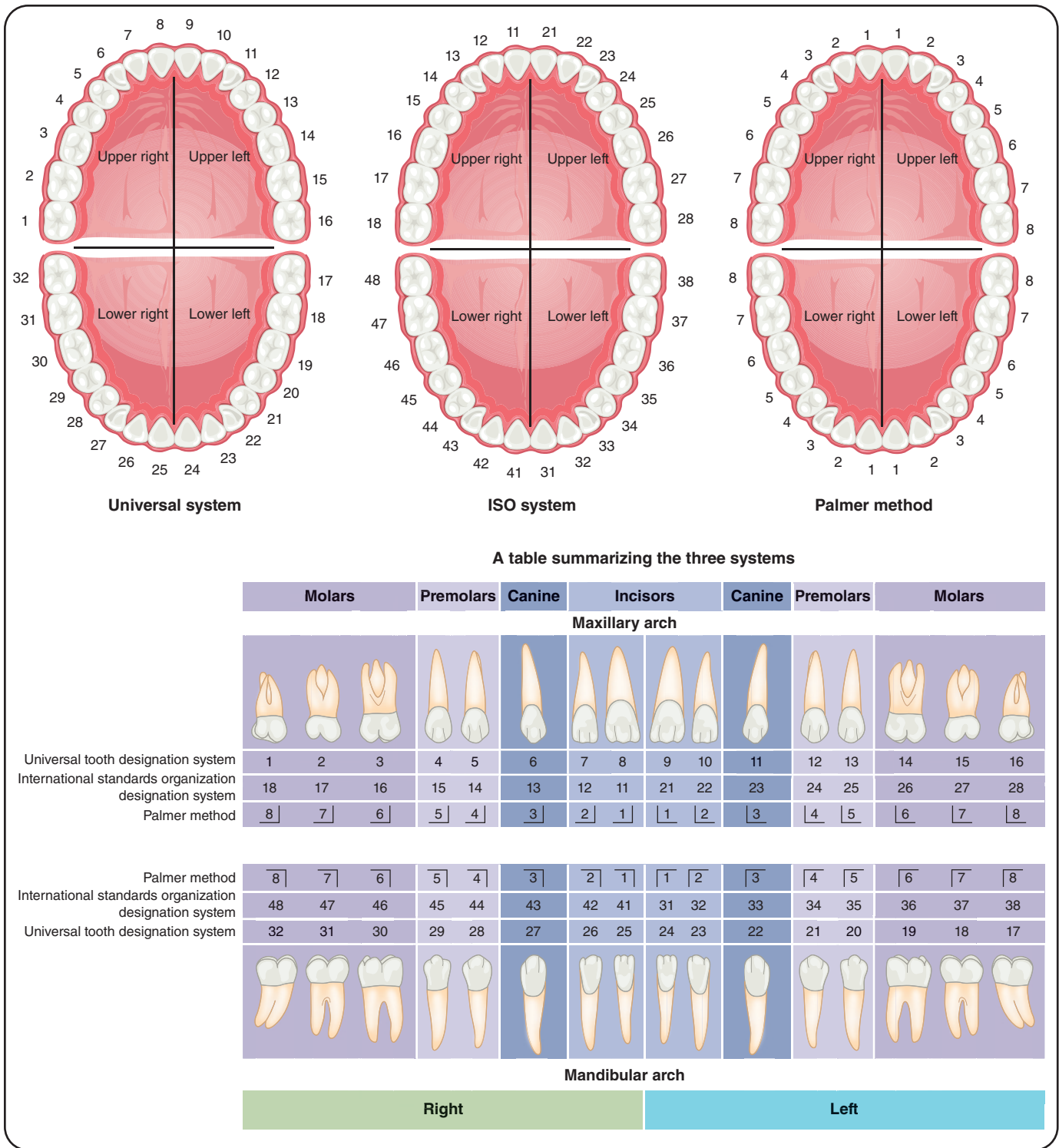


Figure 1.1 Tooth designation: three system summary.

- with best-evidence outcomes or other professional standards;
- encourages active learning methods, such as case analysis and discussion, critical appraisal of scientific

evidence in combination with clinical application and patient factors; and structured sessions in which students/ residents/ dentists reason aloud about patient care.

<b>Pulpal:</b>	
<b>Normal pulp</b>	A clinical diagnostic category in which the pulp is symptom-free and normally responsive to pulp testing.
<b>Reversible pulpitis</b>	A clinical diagnosis based upon subjective and objective findings indicating that the inflammation should resolve and the pulp return to normal.
<b>Symptomatic irreversible pulpitis</b>	A clinical diagnosis based on subjective and objective findings indicating that the vital inflamed pulp is incapable of healing. <i>Additional descriptors:</i> Lingered thermal pain, spontaneous pain, referred pain.
<b>Asymptomatic irreversible pulpitis</b>	A clinical diagnosis based on subjective and objective findings indicating that the vital inflamed pulp is incapable of healing. <i>Additional descriptors:</i> No clinical symptoms but inflammation produced by caries, caries excavation, trauma.
<b>Pulp necrosis</b>	A clinical diagnostic category indicating death of the dental pulp. The pulp is usually non-responsive to pulp testing.
<b>Previously treated</b>	A clinical diagnostic category indicating that the tooth has been endodontically treated and the canals are obturated with various filling materials other than intracanal medicaments.
<b>Previously initiated therapy</b>	A clinical diagnostic category indicating that the tooth has been previously treated by partial endodontic therapy (e.g., pulpotomy, pulpectomy).
<b>Apical:</b>	
<b>Normal apical tissues</b>	Teeth with normal periradicular tissues that are not sensitive to percussion or palpation testing. The lamina dura surrounding the root is intact, and the periodontal ligament space is uniform.
<b>Symptomatic apical periodontitis</b>	Inflammation, usually of the apical periodontium, producing clinical symptoms including a painful response to biting and/or percussion or palpation. It might or might not be associated with an apical radiolucent area.
<b>Asymptomatic apical periodontitis</b>	Inflammation and destruction of apical periodontium that is of pulpal origin, appears as an apical radiolucent area, and does not produce clinical symptoms.
<b>Acute apical abscess</b>	An inflammatory reaction to pulpal infection and necrosis characterized by rapid onset, spontaneous pain, tenderness of the tooth to pressure, pus formation, and swelling of associated tissues.
<b>Chronic apical abscess</b>	An inflammatory reaction to pulpal infection and necrosis characterized by gradual onset, little or no discomfort, and the intermittent discharge of pus through an associated sinus tract.
<b>Condensing osteitis</b>	Diffuse radiopaque lesion representing a localized bony reaction to a low-grade inflammatory stimulus, usually seen at apex of tooth.

Figure 1.2 Pulpal and apical diagnostic terminology.

## References

AAE consensus conference recommended diagnostic terminology. (2009) *Journal of Endodontics* **35**, 1634.

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