

Dental Anatomy and Nomenclature for the Radiologist

Mohammed Abbas Husain, DDS

KEYWORDS

• Tooth naming • Dental anatomy • Dental restorations • CT imaging

KEY POINTS

- The Universal and Federation Dentaire International systems are the major systems for numbering teeth.
- In the United States, the universal system assigns a number 1 to 32 to each of the permanent teeth, and letters A to T to each of the primary teeth.
- Teeth consist of a crown and one or more roots. The crown is visible within the oral cavity; the root is embedded in the alveolar bone.
- Teeth are made up of 4 dental tissues (enamel, dentin, pulp and cementum), most of which have distinct radiographic densities on computed tomography (CT) imaging.
- Dental restorations are common and include fillings, crowns, root canal obturation materials, and dental implants. On CT imaging, most of these materials create substantial metallic artifacts.

INTRODUCTION

The dentition is frequently encompassed in imaging studies of the head and neck. As a result, incidental abnormalities of the dentition are frequently visualized by interpreting radiologists. The abnormalities encountered can potentially alter the course of patient treatment and may require referral to dental practitioners. To effectively identify and communicate the abnormalities that are observed, a good understanding of dental development, morphology, and terminology is required. This article provides an overview of dental anatomy and nomenclature, allowing the radiologist to communicate confidently and accurately with regard to the dentition.

TOOTH NOMENCLATURE, NAMING, AND NUMBERING

Humans develop 2 sets of dentitions, often referred to as the primary (deciduous) and permanent

(succedaneous) dentition. Whether primary or permanent, the dentitions are further subdivided based on the location of a tooth in the upper or lower jaw, or within a specific quadrant of the oral cavity. The teeth in the upper jaw are referred to as the maxillary teeth and in the lower jaw as the mandibular teeth. The 4 quadrants of the oral cavity are designated the maxillary right, maxillary left, mandibular left, and mandibular right quadrants (**Fig. 1**). The division into quadrants serves as a convenient basis for 1 type of tooth classification system described elsewhere in this article, because the types of teeth in each quadrant are repeated. For example, the permanent dentition consists of 8 teeth in each quadrant: 2 incisors (central and lateral), a canine, 2 premolars, and 3 molars, yielding a total of 32 teeth (**Fig. 2A**). In the primary dentition, each quadrant contains 5 teeth: 2 incisors (central and lateral), a canine, and 2 molars (**Fig. 2B**). These teeth are repeated in each of the 4 quadrants of the oral cavity giving a total of 20 teeth.

Disclosures: None.

Section of Oral and Maxillofacial Radiology, UCLA School of Dentistry, 10833 Le Conte Avenue, 53-067A CHS, Box 951668, Los Angeles, CA 90095-1668, USA

E-mail address: mhusain@dentistry.ucla.edu

Radiol Clin N Am ■ (2017) ■--■

<http://dx.doi.org/10.1016/j.rcl.2017.08.001>

0033-8389/17/© 2017 Elsevier Inc. All rights reserved.

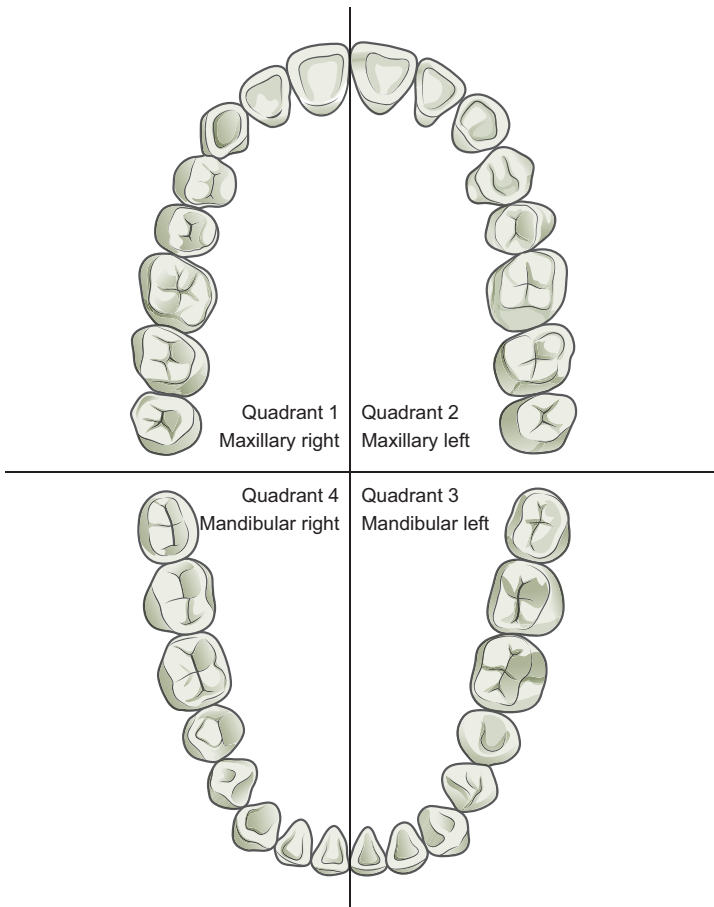


Fig. 1. Graphic drawing demonstrates division of the oral cavity into 4 quadrants. (Courtesy of dentalcare.com.)

Teeth can be referred to by name or by number. Naming teeth is generally more cumbersome owing to the multiple qualifiers necessary to specify a given tooth. Nonetheless, the nomenclature of tooth naming is universally accepted and so is useful when there is doubt about the appropriate number assigned for a tooth. This may arise if there is uncertainty about the classification system being used (such as when interpreting international studies), or when teeth may have moved position secondary to extractions or orthodontic tooth movement. This is a common scenario after orthodontic extraction of the first premolars. The second premolars frequently have moved into the position of the first premolars, and this may create confusion about its appropriate tooth number. The convention for naming teeth should follow this sequence: dentition (primary or permanent), jaw (maxillary or mandibular), side (right or left), tooth name (incisor, canine, premolar, or molar).¹ An example of a tooth name following this convention would

be as follows: permanent maxillary right central incisor. The qualifier specifying the type of dentition, permanent or primary, is unnecessary once all the primary teeth have been exfoliated. Additionally, it is unnecessary when referring to permanent teeth that have no primary analog, such as the first and second premolars and third molars.

Two main classification systems exist for the numbering of teeth: the universal system and the Federation Dentaire International system. Despite its name, the universal system is actually quite country specific; it is the system adopted in the United States by the American Dental Association.² In this system, only teeth are numbered. The numbering begins in the upper right quadrant with #1 referring to the maxillary right third molar (**Fig. 3A**). The numbering continues along the maxillary arch from the right side to the left ending with the maxillary left third molar, which is assigned #16. The numbering then drops to the lower left quadrant beginning with the mandibular

Download English Version:

<https://daneshyari.com/en/article/8824919>

Download Persian Version:

<https://daneshyari.com/article/8824919>

[Daneshyari.com](https://daneshyari.com)