8 Treatment Planning, Outcome Assessment, and Upper Airway Imaging Using CBCT in Clinical Orthodontics

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Abstract

The cone-beam computed tomography scan provides additional information that can be used not only for diagnosis but also for treatment planning and outcome assessment. This chapter will introduce some novel methods of 3D analysis not possible with 2D radiography, which can be easily incorporated right away in clinic orthodontics. Some of these measurements, such as the transverse analysis, have been shown to significantly improve the quality of treatment. In other words, the more we know, the more control we have, and the better result we can achieve.

8.1 Introduction

Cone-beam computed tomography (CBCT) is about more information. Unlike traditional two-dimensional radiography, all the information provided by a 3D CBCT cannot be seen at once and at the same time. A CBCT image provides layers of information, which not only display the current state of the patient but also give insight that may be essential in the orthodontic treatment planning. The additional information is also useful when assessing changes and evaluating results, so outcome assessments also can be more comprehensive. This chapter will address certain techniques that go beyond the regular diagnosis and provide further information for the treatment planning and outcome assessment of the orthodontic patient.

8.2 Imaging of Upper Airway

Imaging of the upper airway using CBCT is a very promising area which may be able to provide sound scientific data and added diagnostic value for treatment planning [1]. The pathological conditions present in the upper airway have far-reaching effects

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