CHAPTER I

BACKGROUND AND RATIONALE

Computed tomography (CT) has evolved remarkably through device improvement and advancement of peripherals, including computer. In the year 1999, multiple detector-row CT (MDCT) appeared and rapid high-speed scanning became possible. However, the usefulness of MDCT in current clinical applications cannot be fully assessed until the patient exposure doses are assessed appropriately.

Multiple detector-row CT is a new modality which is very interesting because MDCT allows a whole body CT examination to be carried out within a single breath-hold. Continuous data acquisition means small lesions can be detected which may be missed using conventional CT. Contrast media MDCT offers the opportunity to examine the arterial system selectively. In addition, the advantage of a short acquisition time may be crucial for specific patients (e.g. children, restless patients).

In the oral and maxillofacial surgery, CT image with 3D reconstruction for head and neck became an important tool for diagnosis. The CT image for this procedure was use the protocol that different from brain CT scanning. We studied the radiation dose and diagnostic quality image from MDCT head and neck examination(excluding the brain) employing different protocols including these regularly and routinely used .