INTRODUCTION

The petrous bone is part of the temporal bone which contains the sensory organs of hearing and balance, and structurally contributes to the cranial vault **(Bobby, 2006).** The petrous bone or pyramid is pyramidal bone and is wedged in at the base of the skull between the sphenoid and occipital bones. Directed medialward, forward, and a little upward. It is composed of a base, an apex, three surfaces, and three angles, and contains, in its interior, the essential parts of the organ of hearing **(Henry, 2000)**.

The petrous apex is the most inaccessible portion of the temporal bone, It can be involved in congenital, infectious, inflammatory, and neoplastic processes. Diseases of the petrous bone should now be diagnosed by means of multislice computed tomography (MSCT) **(Bobby, 2006).**

Because of the excellent imaging of bone structures with MSCT, this technique is especially suitable for the diagnosis both of acquired pathologies and of congenital abnormalities of the external auditory meatus, the middle ear and the mastoid, of trauma-induced pathologies of the entire petrous bone, and of osteogenic diseases **(Greess *et al*., 2002).**

Computed tomography (CT) of the petrous temporal bone with high spatial resolution is an established standard examination technique **(Torizuka *et al*., 1992).** Normal anatomy of the osseous structures of the middle ear, as well as normal anatomy and anatomic variations of the

ossicular ligaments, has been studied with CT **(Lemmerling *et al*., 1997).** CT has also been used to examine inner ear anatomy **(Westerhof *et al*., 2001).**

A recent major advance in CT technology, the introduction of multi-detector row helical CT, may provide a way to view the petrous temporal bone structures. This new type of CT has a submillimeter spatial resolution, which is especially important in the z-axis. Besides providing additional information compared with single-detector row CT, multi-detector row CT may also improve the visibility of thin structures, such as the stapedial crura or the ossicular ligaments **(Jager *et al*., 2005).**

Multi-detector row CT is beneficial in eliminating double examinations when transverse and coronal projections are necessary to assign a diagnosis, such as in patients with middle or inner ear tumors or inflammation and labyrinth fistulas. This is also extremely important to immobilized patients with head trauma or severe polytrauma, where coronal CT is not possible. Thus, it is clinically important to determine the value of reformatted coronal images from multi-detector row CT **(Jager *et al*., 2005).**