

Imaging of Congenital Middle Ear Deafness

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Abstract

Introduction: Conductive hearing loss, in the presence of a normal external ear, is usually due to an interference with the normal transmission of sound from the tympanic membrane across the ossicular chain to the oval window. If conductive hearing loss occurs in a young child, congenital middle ear pathology is the most likely cause. Materials and Methods: High resolution computed tomography of the middle ear is the diagnostic modality of choice. Details of the imaging technique are outlined in this article. Eight cases of congenital middle ear deafness imaged in the radiological departments of Changi General Hospital and Tan Tock Seng Hospital in Singapore are illustrated. Results: Congenital middle ear deafness may be classified into ossicular chain abnormalities, congenital ossicular fixation, congenital oval window atresia and congenital round window atresia. The imaging features for each category are described. Conclusion: With proper imaging technique and a systemic analysis of the images, the abnormalities that result in congenital middle ear deafness can usually be demonstrated on most occasions.

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Key words: Computed tomography (CT), Incus, Malleus, Oval window, Round window, Stapes

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