



National Imaging Associates, Inc.		
Clinical guidelines INTERNAL AUDITORY CANAL CT (Temporal & Mastoid Bone CT includes outer, mid & inner ear)	Original Date: Page 1 of 4	September 1997
CPT Codes: 70480, 70481, 70482	Last Review Date:	September 2015
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INTRODUCTION:

Internal auditory canal computed tomography (CT) is a unique study performed for problems such as conductive hearing loss, chronic otitis media, mastoiditis, cholesteatoma, congenital hearing loss and cochlear implants. It is rarely used for evaluation of VIIth or VIIIth nerve tumors. It is a modality of choice because it provides 3D positional information and offers contrast for different tissue types.

INDICATIONS FOR INTERNAL AUDITORY CANAL CT:

- For evaluation of acoustic neuroma or other lesion of the VIIth or VIIIth cranial nerve in patients unable to undergo an MRI.
- For evaluation of conductive hearing loss.
- For evaluation of chronic otitis media.
- For evaluation of mastoiditis.
- For evaluation of cholesteatoma.
- For evaluation of congenital hearing loss.
- For evaluation of cochlear implants.

ADDITIONAL INFORMATION RELATED TO INTERNAL AUDITORY CANAL CT:

Request for a follow-up study - A follow-up study may be needed to help evaluate a patient’s progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

Internal Auditory Canal (IAC) – The Internal Auditory Canal is the bony channel within the temporal bone that carries the VIIth and VIIIth cranial nerves (and blood vessels) from the inner ear to the brain stem. The IAC is approximately 1 cm in length. An acoustic neuroma is a benign tumor that arises from the nerve sheath and may cause sensorineural hearing loss, vertigo, or facial nerve weakness as it enlarges. Tumors or lipomas within the IAC have been reported.

Conductive Hearing Loss – Conductive hearing loss may be caused by fluid in the middle ear resulting from otitis media or from eustachian tube obstruction. CT scans may demonstrate underlying problems due to its aid in visualization of the middle ear space and the mastoid.

Chronic Otitis – When the eustachian tube is blocked for long periods of time, the middle ear may become infected with bacteria. The infection sometimes spreads into the mastoid bone behind the ear. Chronic otitis may be due to chronic mucosal disease or cholesteatoma and it may cause permanent damage to the ear. CT scans of the mastoids may show spreading of the infection beyond the middle ear.

Mastoiditis – CT is an effective diagnostic tool in determining the type of therapy for mastoiditis, a complication of acute otitis media leading to infection in the mastoid process.

Cholesteatoma – A cholesteatoma is a cyst-like mass occurring most commonly in the middle ear and mastoid region. CT scanning may help to determine the extent of the disease process. It can determine the extent of cholesteatoma by showing the combination of a soft tissue mass and bone erosion.

Congenital Hearing Loss - Genetic factors and factors present either in utero or at time of birth may cause congenital hearing loss in children. High-resolution CT provides the examination of choice furnishing anatomic detail for planning a surgical approach

Cochlear Implants – Cochlear implants provide an opportunity to restore partial hearing. The electronic device, surgically implanted, converts sound to an electrical signal. CT allows the visualization of cochlear anatomy and provides 3D positional information. CT also offers contrast for different tissue types and may be used even when the implant is in place.

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