Blunting of the Scutum: A Key Feature in the Radiologic Diagnosis of Acquired Cholesteatoma

The determination of the presence of acquired cholesteatoma in the middle ear and mastoid is one of the most common indications for computerized tomographic (CT) imaging of the temporal bone. While the presence of a soft tissue density in the mesotympanum, epitympanum or antrum is a feature of cholesteatomatous disease, CT imaging cannot reliably differentiate soft tissue densities caused by cholesteatoma, middle ear effusion or fluid completely filling the middle ear and mastoid air cell system, granulation tissue, brain, or other soft tissue densities that may fill the air-containing space. Bone erosion is the radiologic sine qua non of a cholesteatoma. In the absence of bone erosion, a cholesteatoma may be present but cannot be diagnosed on CT imaging studies. One of the earliest abnormalities of a cholesteatoma that can be appreciated on a CT scan is erosion of the scutum, which is the medial aspect of the roof of the external auditory canal, and where the tympanic membrane attaches superiorly. Scutum erosion is most easily seen on coronal CT images.

Figure 1. This is a coronal CT image of a temporal bone with no known middle ear pathology. It passes through the temporal bone at the level of the cochlea, and uses a bone window algorithm with a window width of 4,000 H. The scutum can be identified as the sharp-edged superomedial border of the external auditory canal (white arrowhead).
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REFERENCES: