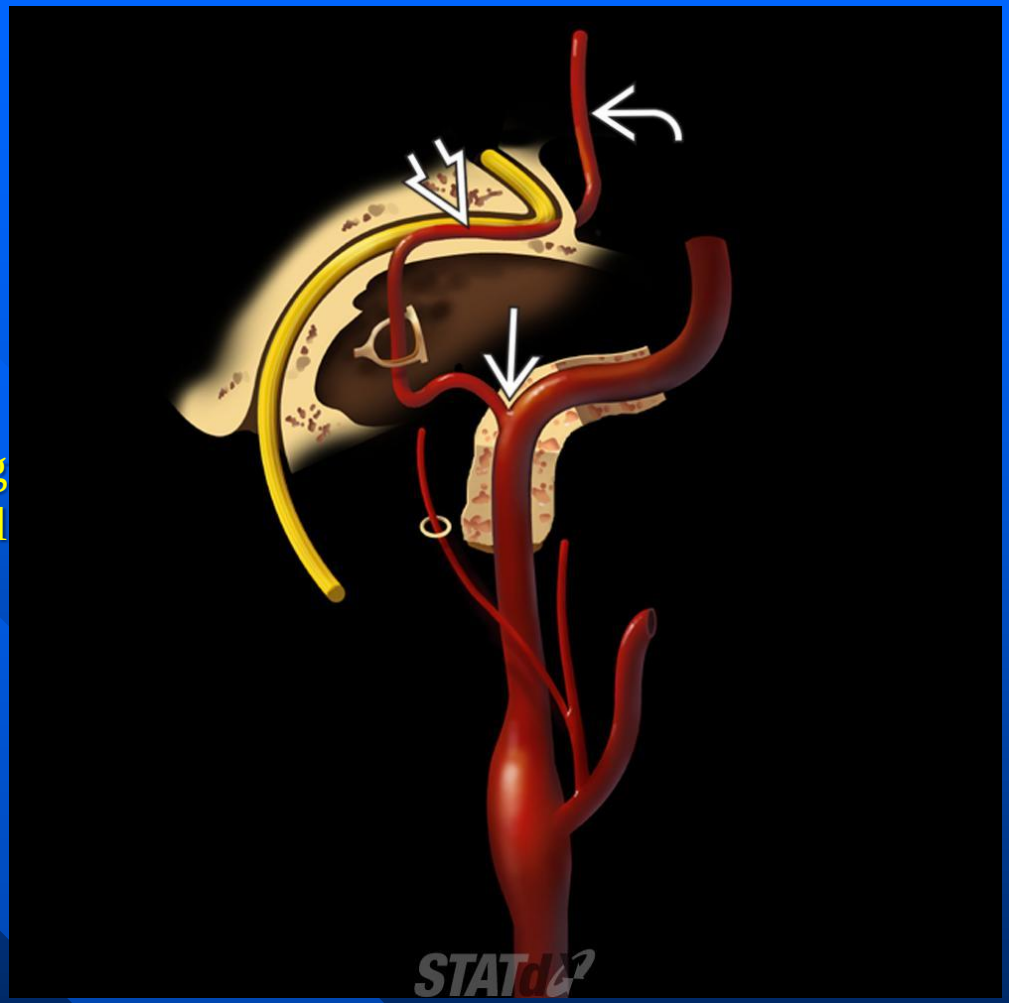
Persistent Stapedial Artery

- Small canaliculus leaving the carotid canal;
- Linear structure crossing the middle ear over the promontory;
- An enlarged facial nerve canal or a separate canal parallel to the facial nerve; and
- Absence of the foramen spinosum

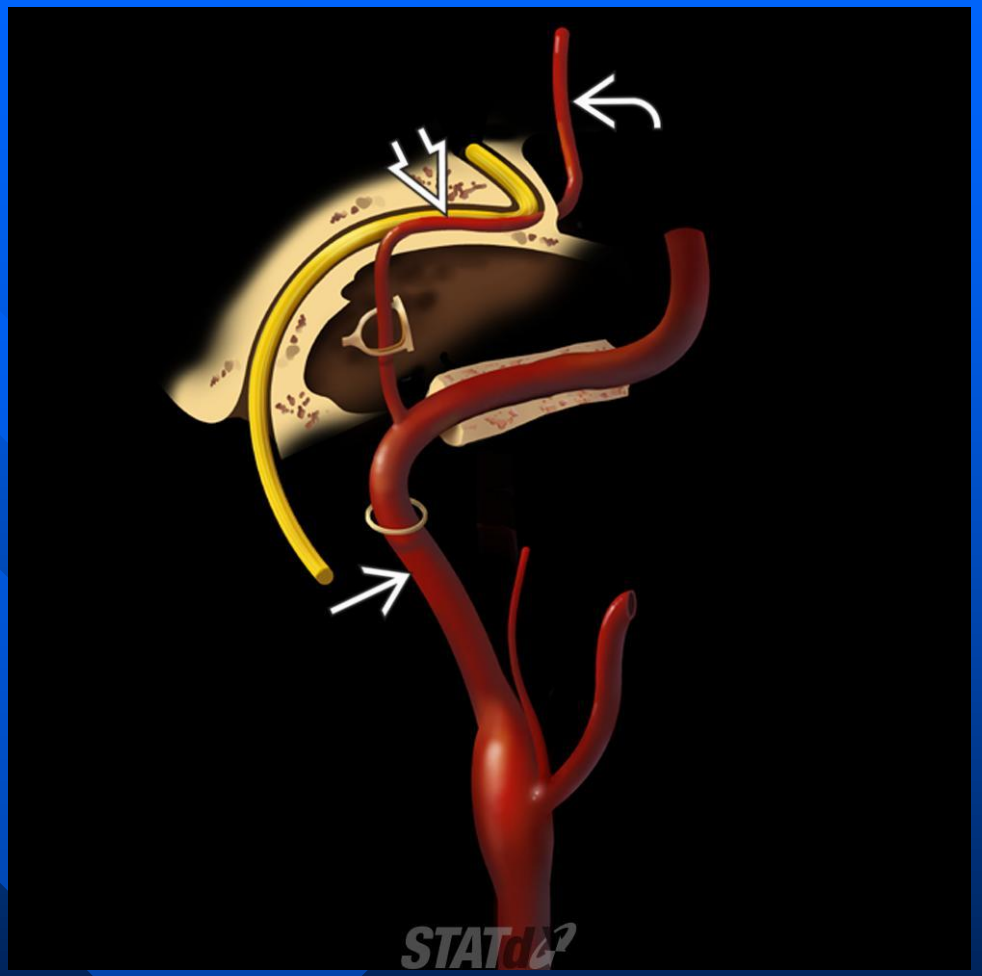
Imaging

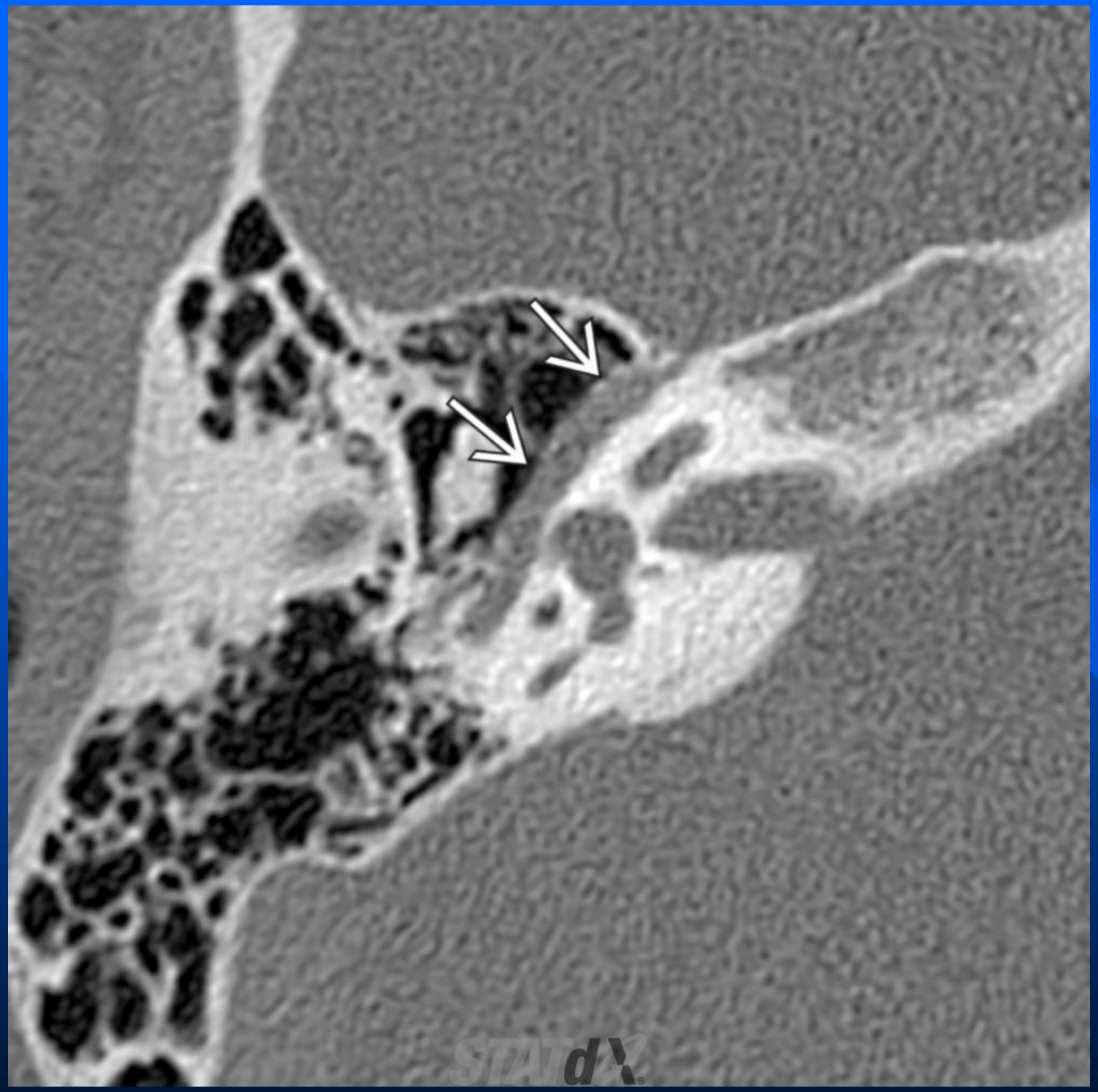
- Temporal bone **CT findings**Enlargement of anterior tympanic segment of facial nerve canal
- Absent foramen spinosum
  - Posterolateral from foramen ovale on axial bone CT
- Frequently bilateral

Lateral graphic shows the persistent stapedial artery (PSA) arising from the vertical segment of the petrous internal carotid artery (white solid arrow), passing through the stapes, and traveling along the tympanic segment of the facial nerve (white open arrow) to become the middle meningeal artery (white curved arrow).

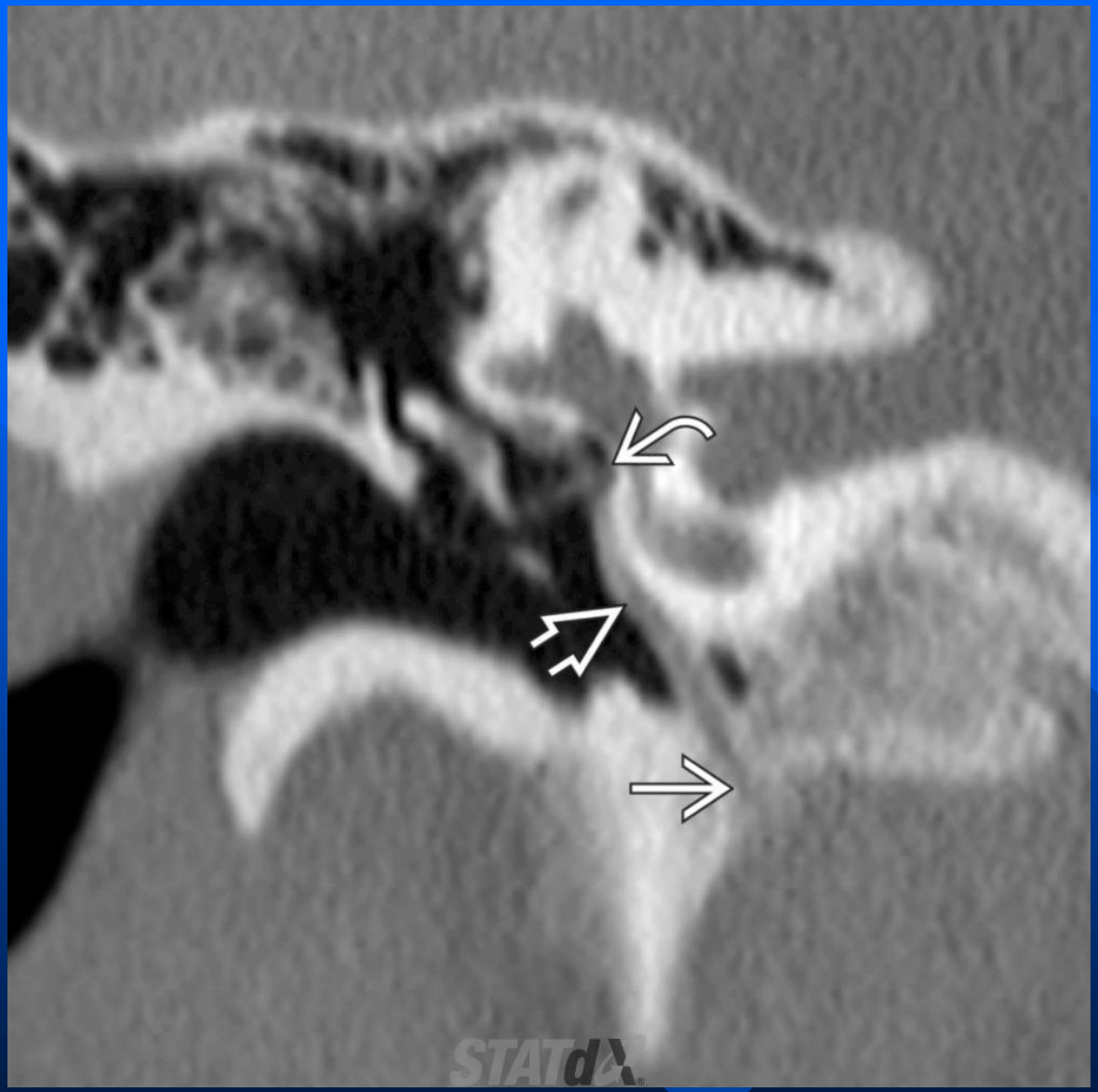


Lateral graphic shows the PSA arising from the aberrant internal carotid artery (white solid arrow) and passing through the stapes to follow the anterior tympanic facial nerve segment (white open arrow). Intracranially, the PSA becomes the middle meningeal artery (white curved arrow).

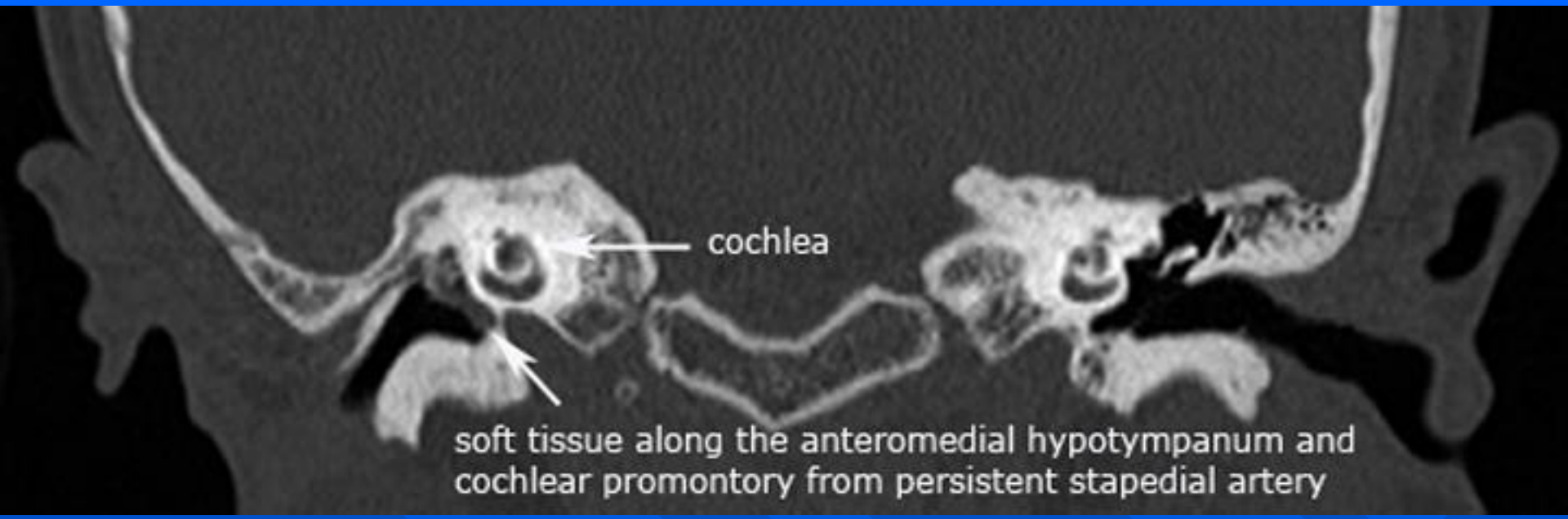


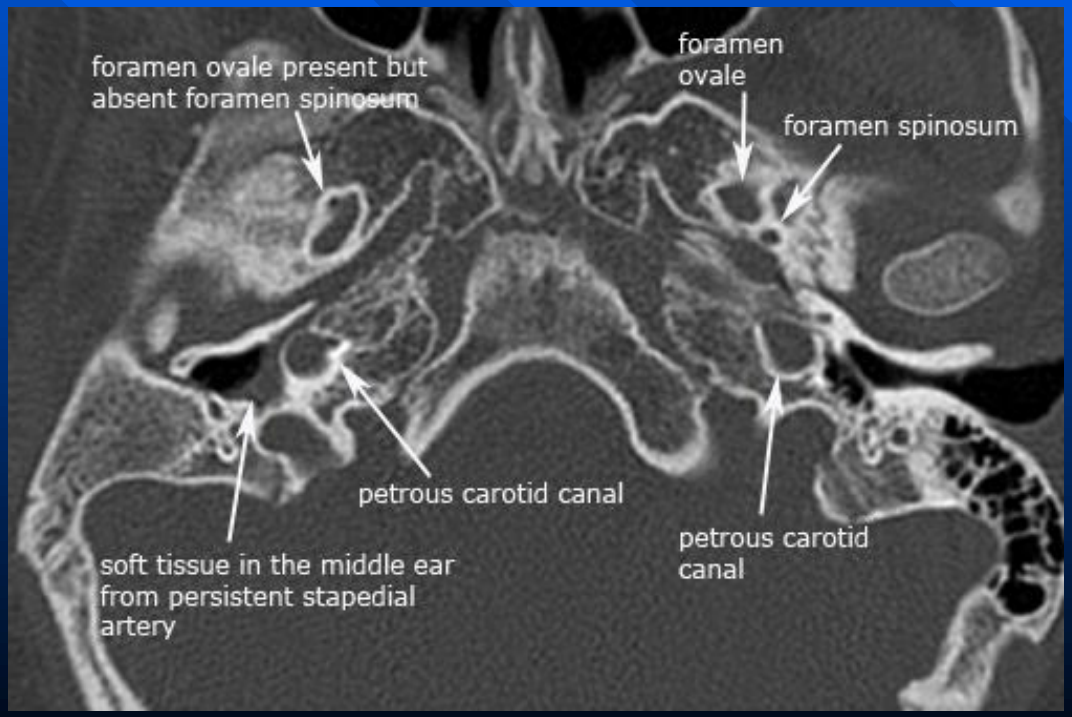


Axial right temporal bone CT reveals an enlarged tympanic segment (white solid arrow) of the intratemporal facial nerve to the PSA.



Coronal bone CT of the right ear in the same patient demonstrates the PSA arising from its takeoff origin from the genu of the petrous internal carotid artery (white solid arrow), ascending on the cochlear promontory (white open arrow), and passing through the crura of the stapes (white curved arrow) on its way to join the tympanic segment of the facial nerve canal. (Courtesy K. Funk, MD.)


cochlea
soft tissue along the anteromedial hypotympanum and cochlear promontory from persistent stapedial artery


foramen ovale present but absent foramen spinosum
foramen ovale
foramen spinosum
petrous carotid canal
soft tissue in the middle ear from persistent stapedial artery
petrous carotid canal