Correspondences

Figure 2 Lumbar sagittal diffusion-weighted imaging (DWI) (A) and color-coded apparent diffusion coefficient (ADC) cartography (B) reveal that the central part of the mass is hyperintense on DWI, appearing brighter than the normal spinal cord, despite a decreased ADC.

In conclusion, this report confirms the usefulness of spinal DWI as a reliable tool to discriminate epidermoid from arachnoid-cysts in the postoperative spine.

References


Figure 1  Axial CISS (A) and contrast-enhanced T1 fat-sat (B) images show a tiny enhancing schwannoma in the right internal auditory canal (IAC) (thick arrow). Oblique sagittal CISS images perpendicular to the long axis of the IAC on the right (C) and left (D) show the spatial orientation of the 7—8th nerve complex in the IAC (facial nerve : 1 ; superior vestibular nerve : 2 ; inferior vestibular nerve : 3 ; cochlear nerve : 4). Note the cochlear schwannoma on the right side (thick arrow : 4). Schematic diagram (E) shows the nerves within the IAC (a : anterior ; p : posterior). Coronal CISS images through the IAC on the right (F) and left (G) show the schwannoma (thick arrow) on the right side.

revealed that the lesion was confined to the cochlear nerve within the IAC on the right side (Fig. 1) and led to the diagnosis of cochlear nerve schwannoma; the patient is currently on clinical follow-up.

The vestibular nerve is more likely to have a disordered arrangement of sheath cells at the glial—schwann cell junction and hence, is more prone to develop schwannomas [5]. These tumors are more commonly seen involving the cochlea, labyrinth or middle ear than the intracanalicular cochlear nerve. We could find only five previously reported cases of such intracanalicular schwannomas originating from and confined to the cochlear nerve [1—4,6]. Preoperative MRI diagnosis of such a condition is even more rarely reported [4,6].

Management choices for tumors confined to the cochlear nerve within the IAC depend on several factors, including age and clinical status of the patient and hearing levels in the involved and uninvolved ears [4]. Shin et al. [6] recently described a case of sudden deafness, which was diagnosed by gadolinium-enhanced MRI and surgically removed using a transotic approach. For those who have poor hearing in the other ear, as in our case, management by observation will help the patient to use the hearing in the involved ear for as long as possible. Hence, the precise imaging diagnosis is of critical importance. Cross-sectional imaging anatomy of the 7—8th nerve complex within the IAC is well described [7]. The facial nerve occupies the anterosuperior portion while the cochlear nerve lies in the anteroinferior portion, with the vestibular nerves coursing through the posterior compartments of the IAC.

3D-CISS is routinely used in the evaluation of cerebellopontine angle lesions and inner- and middle-ear structures [8]. The millimeter-thin sections and short TE (limiting signal loss due to magnetic susceptibility effects) with this technique allow good spatial resolution and a high signal-to-noise ratio within clinically feasible acquisition times. In our case, this sequence gave the maximum information concerning the spatial relationship of the small intracanalicular tumor. Acquiring images in the coronal and oblique sagittal planes perpendicular to the IAC proved to be most fruitful for demonstrating the cochlear location of the lesion compared with thin contrast-enhanced, axial, T1-weighted images. Surgery can be deferred in purely intracanalicular cochlear schwannomas until hearing loss is complete or tumor growth mandates its immediate removal [4,6]. For this reason, a precise imaging diagnosis is important to the clinical decision-making process. In our case, there was discordance between the clinical examination and audiogram findings for reasons that remain unknown. Also, no pathology was detected by MRI in the mastoids or middle ear on either side.

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References