The dural tail sign

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The dural tail sign was first described by Wilms in 1989, as a post-contrast linear thickening of the meninges that resembles a tail extending from a mass on T1-weighted MR imaging.[1] The sign consists of a tapering rim ranging from 0.5 to 3.0 cm in length with an inner surface that is either smooth or slightly nodular.[2]

In 1990, Goldsher and colleagues devised a subset of radiologic criteria to reliably establish the absence or presence of the dural tail sign. The criteria adopted included (*i*) The tail must have an enhancement greater than that of the tumor itself, (*ii*) the tail should taper smoothly away from the tumour, and (*iii*) the tail should be identified on 2 successive sections through the tumour.[2] Based on these criteria, they concluded that the dural tail sign was a 'highly specific feature of meningioma'.[2] The dural tail sign is thought to have a 60 - 72% specificity for the diagnosis of meningioma.[3]

It was initially proposed that dural tails resulted from direct tumour invasion, but investigators have not been able to demonstrate direct tumour involvement. It was therefore proposed that dural tails represented reactive changes to the dura mater, adjacent to but not in contiguity with the tumour.[4] Hypervascular meningiomas result in additional adjacent reactive changes such as hyperostosis to adjacent bone. It is reasonable that both mechanisms (tumour invasion and hypervascular reaction) may be responsible for the dural tail sign.[4]

The dural tail sign is also infrequently reported in a variety of other intra-axial as well as extra-axial lesions including neuromas, chloromas,

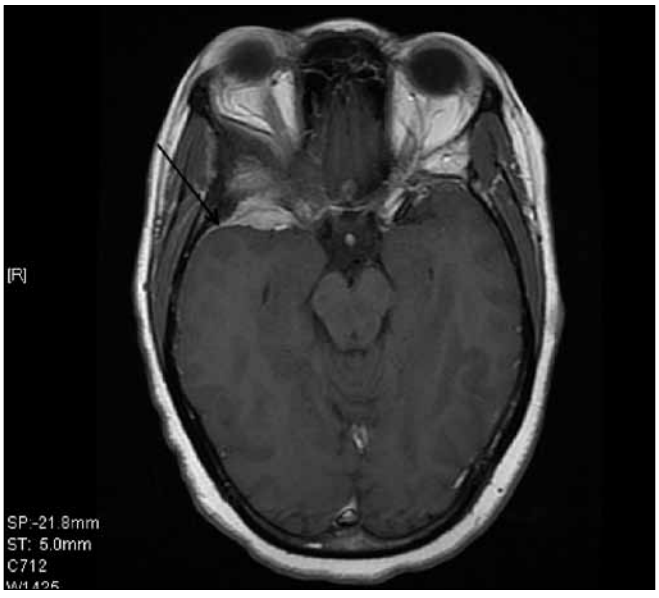

Fig. 1. Axial T1-weighted spin-echo MR image of the brain with intravenous gadolinium demonsrates the dural tail (arrow) i.e. linear thickening and enhancement of the meninges appearing as a tail, attached to a meningioma in the right anterior temporal lobe.

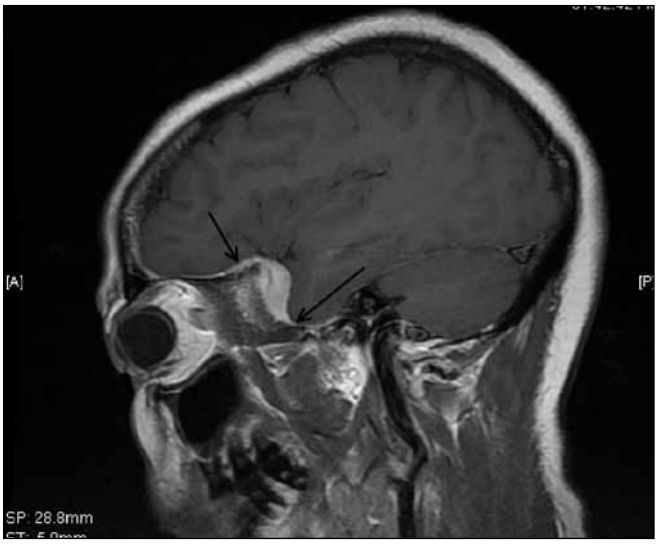

Fig. 2. Saggital T1-weighted spin-echo MR image of the brain with intravenous gadolinium of the same patient demonsrates the dural tails (arrows) of the meningioma and the hyperostosis of the adjacent bone.

Fig. 3. Saggital T1-weighted spin-echo MR image of the upper thoracic spine demonstrates a dural tail (arrow) associated with a spinal meningioma.

metastases, lymphoma, glioma, pituitary diseases and granulomatous disorders affecting the CNS.[5] Despite its non-specificity, it remains a useful sign in assessing the morphology, enhancement pattern and centricity of a lesion.

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