Ganglioglioma

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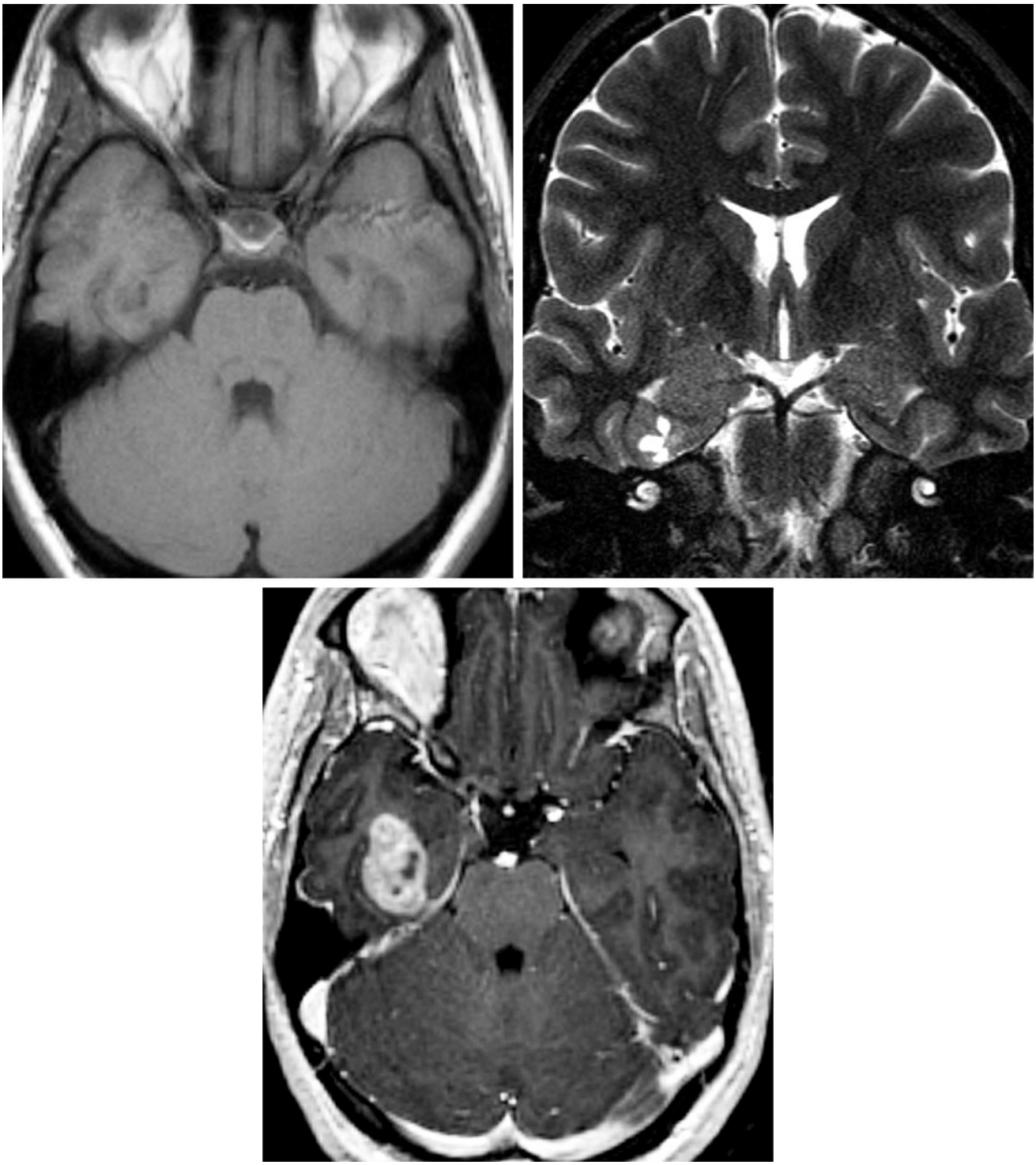

Figure 1: (Top Left) This inferior right temporal ganglioglioma is nearly invisible on T1WI. The cystic change seen in this lesion on coronal T2WI (top right) and contrast-enhanced T1WI (bottom) is variably present in

this type of lesion. The degree of enhancement is also highly variable, although avid in this patient's lesion.

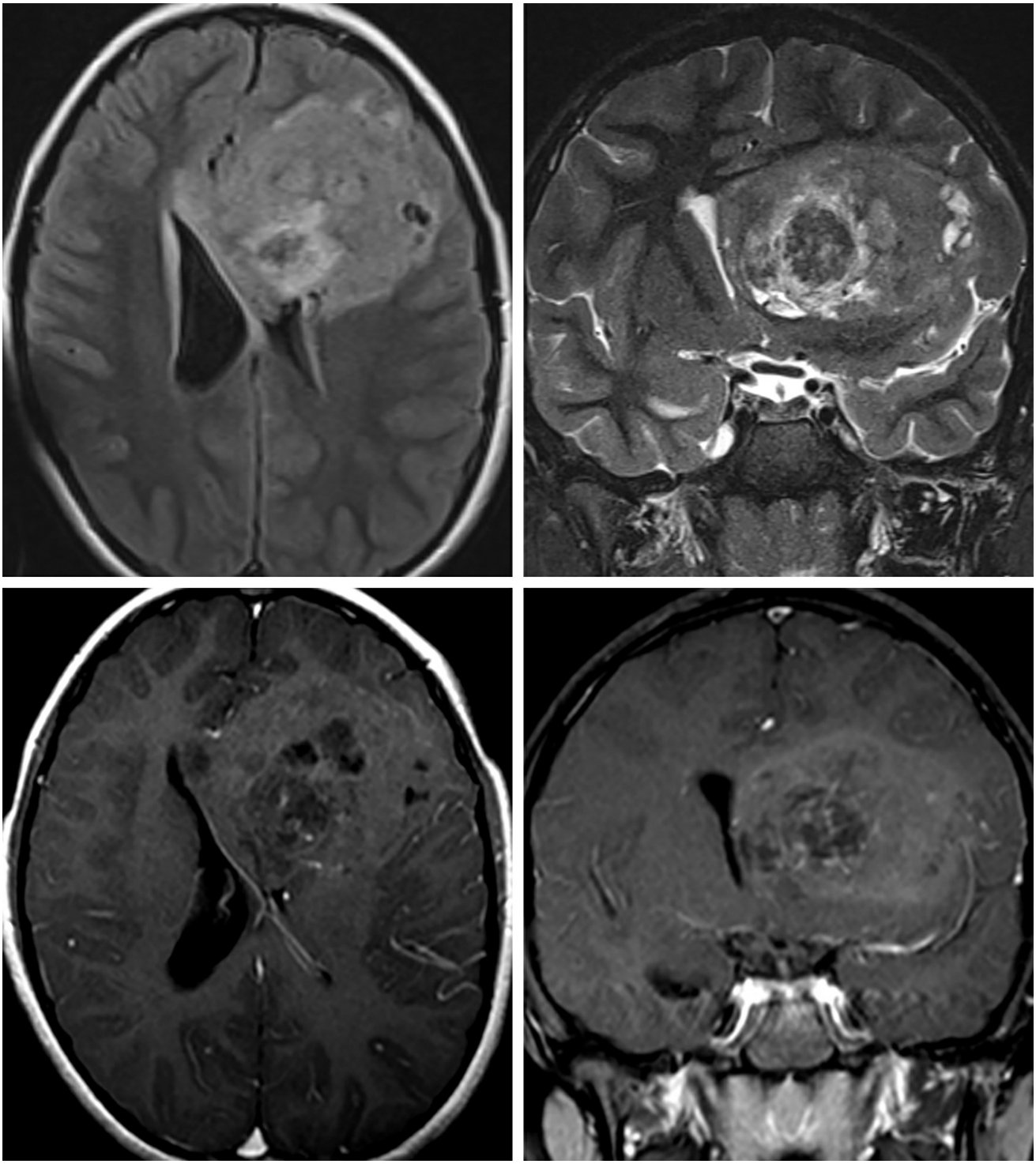

Figure 2: This complex FLAIR-hyperintense (top left), STIR-hyperintense (upper right) ganglioglioma in the left frontal lobe demonstrates areas of low-signal-intensity hemorrhage medially (an atypical feature) and only a small amount of brighter surrounding edema anteriorly on FLAIR (top left). Cystic changes are also present in the periphery, most clearly visible on STIR (top right). Only faint enhancement is present in this example (bottom left, axial contrast; bottom right, coronal contrast).

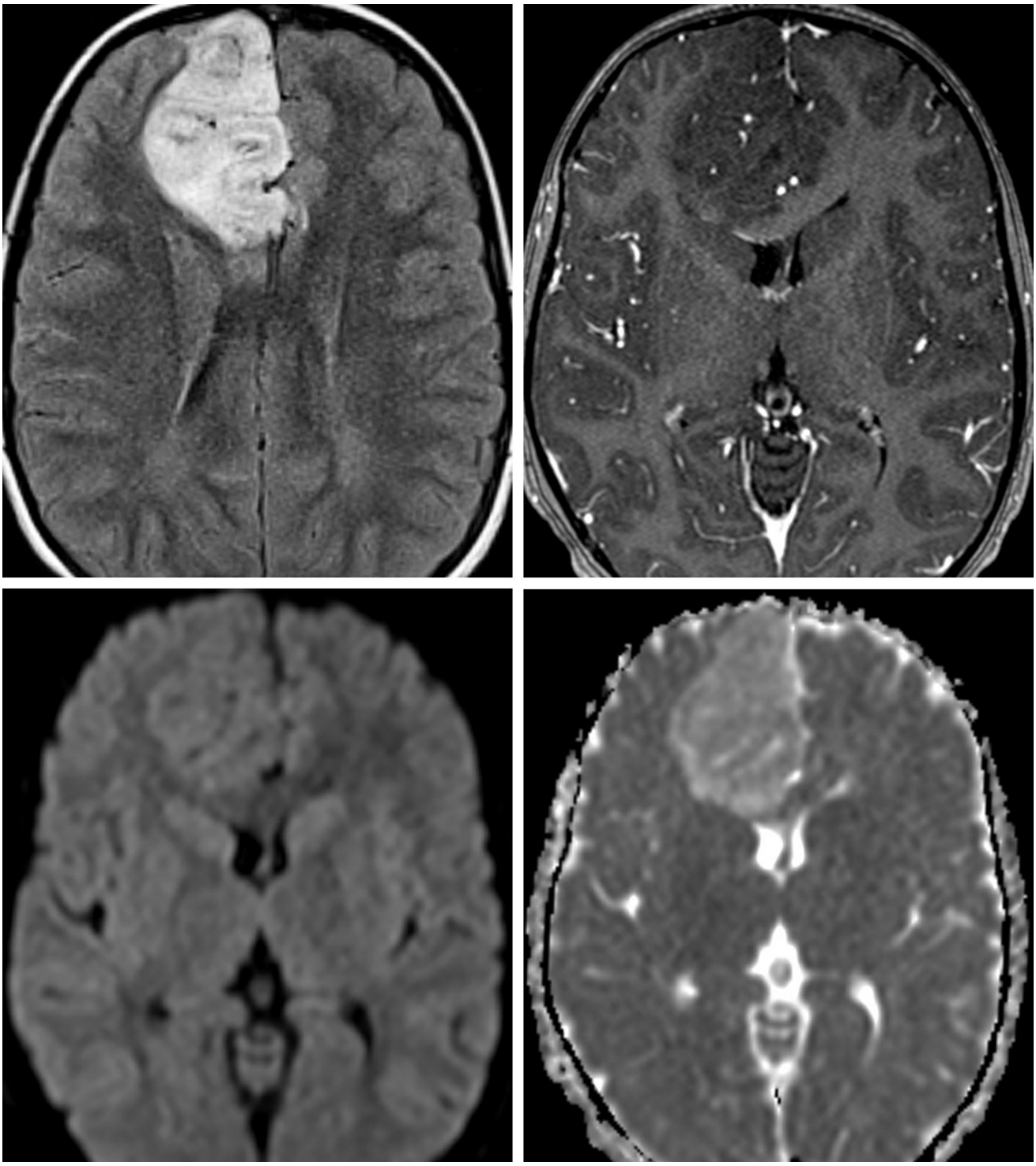

Figure 3: This ganglioglioma involves the medial right frontal lobe in a display of FLAIR hyperintensity (top left) without any appreciable contrast enhancement (top right). The lesion is typical in its infiltrative involvement of the cortex and adjacent white matter. There is no restricted diffusion (bottom left, DWI; bottom right, ADC) to suggest hypercellularity.

BASIC DESCRIPTION

- Slow-growing, well-differentiated, and cortically based neuroglial tumor

PATHOLOGY

- WHO grade I or II
- Anaplastic ganglioglioma (WHO grade III) rare
- Dysmorphic ganglion and glial cells

CLINICAL FEATURES

- May affect all ages (majority discovered at <30 years of age)
- Slight male gender predilection
- It is the most common tumor-related cause of temporal lobe epilepsy
    - Common symptoms: nausea, vomiting, headaches
    - Focal neurologic deficits
- Associated with neurofibromatosis types 1 and 2 and Turcot syndrome
- Treatment: surgical resection ± chemoradiation for unresectable tumors
- Prognosis: good prognosis with complete surgical resection, resolution of seizures after surgery is common

IMAGING FEATURES

- General
    - Mixed solid-cystic, enhancing, and cortically based (cyst with mural nodule)
        - May appear entirely solid
    - Temporal lobe >> frontal and parietal lobes
    - May show calcification
    - Associated with adjacent cortical dysplasia, expansion of adjacent cortex
- CT

    - Variable density and enhancement on contrast-enhanced CT
    - Calcification commonly present, hemorrhage rare
- MRI
    - T1WI: isointense to hypointense relative to gray matter; ±cortical dysplasia
    - T2WI: usually hyperintense or heterogeneous; lacks adjacent edema
    - T2*/GRE/SWI: black signal blooming secondary to calcification
    - T1WI+C: moderate, heterogeneous enhancement or nonenhancing

IMAGING RECOMMENDATIONS

- MRI with contrast, include coronal T2WI/STIR and coronal FLAIR for temporal lobe evaluation

For more information, please see the corresponding chapter in Radiopaedia.

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