Anterior pattern disease in adrenoleukodystrophy

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An 8-year-old boy presented in the emergency department with seizures. An MRI revealed symmetrical areas of T2 FLAIR hyperintensity and contrast enhancement involving the frontal white matter, the anterior commissure and the genu of corpus callosum (Figs. 1 and 2). There was no involvement of the parieto-occipital lobes or peritrigonal white matter, but there was a lesion in the splenium. There was sparing of the subcortical-U fibers. This was most consistent with the predominant frontal pattern of adrenoleukodystrophy (ALD), which was later confirmed with biochemical and cytogenetic examinations.

Fig. 1 T2 FLAIR axial image

Fig. 2 Contrast-enhanced sagittal T1 image

Recently, five MR imaging patterns have been described in cerebral ALD [1]. The most common pattern (66%) is characterized by confluent T2 prolongation of the deep parieto-occipital white matter and the visual pathway. The second most common pattern (15%) is characterized by lesions in the deep anterior frontal white matter, genu and anterior body of the corpus callosum, also known as anterior pattern disease.

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