Imaging in developmental delay

Chen Hoffmann, MD

Developmental delay is a clinical disorder, characterized by failure to achieve normal milestones in the development of a child. It is caused by a variety of disorders, part of them can be diagnosed by imaging, and many of them are without radiological markers.

It is important when to scan these children, no less than the use of appropriate technique. In my talk the technique will be discussed, including conventional imaging sequences, such as T1, T2, FLAIR and gadolinium enhancement, and the use of modern imaging sequences as well. In this category DWI and DTI will be emphasized, together with MR Spectroscopy.

The imaging findings are brain malformations, abnormal myelination, destruction of brain parenchyma, abnormal signals from the white matter, and abnormal metabolites in the MRS.

The differential diagnosis will be presented with images of the most frequent disorders causing developmental delay, including genetic and metabolic disorders, including creatine deficiency, with the correct radiological diagnosis using MR Spectroscopy.