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MR of Neuronal Migration Anomalies

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Migration anomalies are congenital malformations neuroblasts during the third to fifth gestational months. I pachygyria, polymicrogyria, unilateral megalencephaly, heterotopias. Patients who have these conditions prese delay and seizures, and abnormal motor skills are note infants. To determine the utility of MR as a method fo used MR to evaluate 13 patients who had the full spect was more sensitive than CT in detecting these anomalie between gray and white matter. We found that MR wa detecting schizencephaly, where recognizing the pre cleft is critical to distinguishing that disease from p polymicrogyria, where critical details of cortical architec overlying bone. Multiplanar capabilities were also foun clefts may not be detected when the imaging plane is p MR should be the primary imaging method for infants mental delay.

Abnormalities of cell migration are characterized b in the cerebral cortex. This broad group of anomalie polymicrogyria, schizencephaly, unilateral megalenc otopias. All these entities have been characterized sonography and CT. MR is an imaging technique u anomalies because of its exceptional differentiation b and its high-resolution multiplanar display of anatom

In a review of 537 MR studies in the pediatric patients with migration anomalies. We review the si alies and their MR appearance. The relationship theories of pathogenesis is emphasized.

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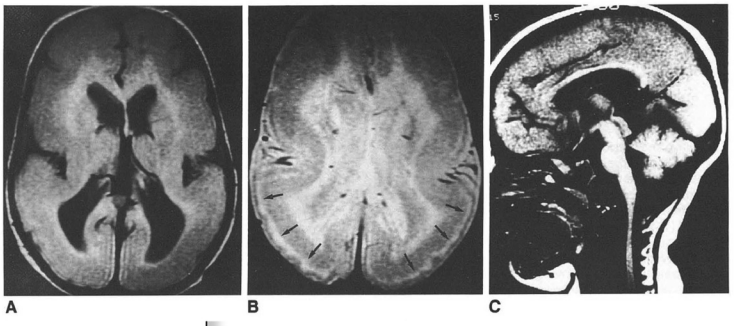

Variable Appearances of Subacute Intracranial Hematomas on High-Field Spin-Echo MR

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Subacute intracranial hematomas have variable appearances o ages. They are hyperintense on T1-weighted images owing to meth variable intensities on T2-weighted images. Observation of the diffe echo MR intensity patterns of five subacute hematomas suggests t gorization into different methemoglobin states may be possible. In intracellular methemoglobin is hyperintense on T1-weighted ima hypointense on T2-weighted images, undiluted free methemoglobir tense on T1-weighted images and isointense or slightly hypointer images, and dilute free methemoglobin is hyperintense on both T images. However, it appears that certain regions of subacute hemato to differentiate, by intensity patterns alone, from melanotic melanor We believe that, despite some limitations, MR is useful in dividing s hematomas into their respective methemoglobin states, and also t gorization is possible.

Early experience with MR imaging of intracranial hemator revealed three characteristic signal-intensity patterns [1]:

1. Acute hematomas (<1 week old) are isointense to gray mat images and markedly hypointense on T2-weighted images. Th selective T2 proton relaxation enhancement (relaxation time sl cellular deoxyhemoglobin.

2. Subacute hematomas (about 1 week to <1 month old) are ir at the hematoma periphery on T1-weighted images. The hyp weighted images proceeds to fill the whole hematoma and even becomes observable on T2-weighted images as well. This is formation of intracellular methemoglobin, which is paramagnetic, cell lysis and watery dilution by resorption of the resultant free

3. In subacute and chronic hematomas, the adjacent brain par hypointense on T1-weighted images and markedly hypointens images. This is because hemosiderin deposits produce a sele enhancement.

We report our observations on the previously unappreciate high-field MR intensities of subacute hematomas and discu relaxation mechanisms and relevant differential diagnoses.

Subjects and Methods

Over a period of 1 year, we observed five patients with subacute int from various causes. All hematomas were diagnosed and staged by cli Two were confirmed surgically and pathologically. MR imaging was pe T superconducting unit. Spin-echo pulse sequences were obtained wi two excitations, and 256 × 128 acquisition matrixes. T1-weighted image

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