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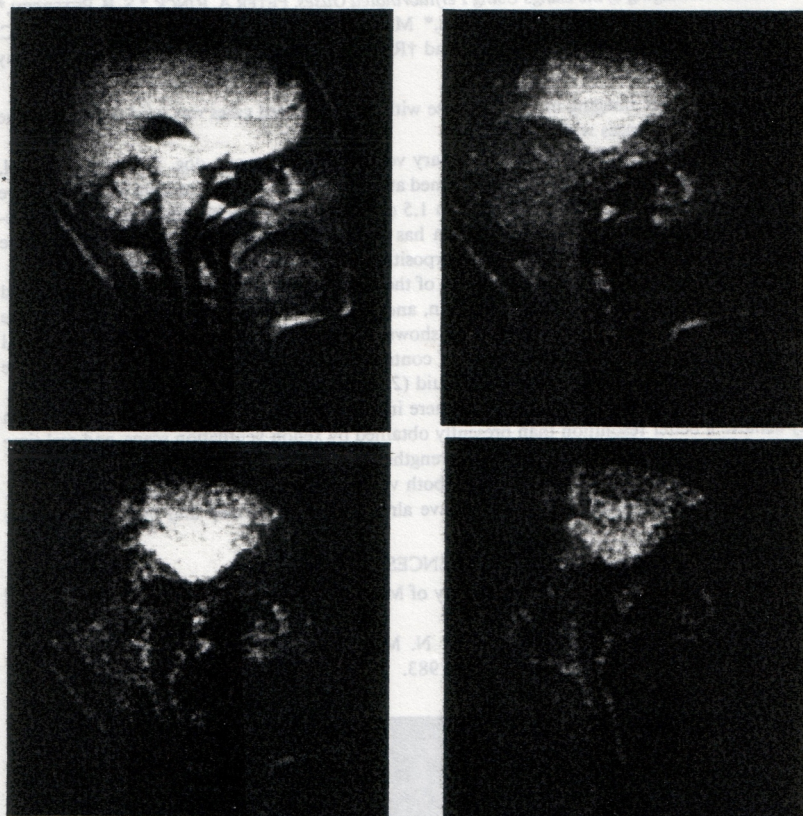


FIG. 1. Four images of a CPMG spin-echo pulse sequence. Recurrence of an astrocytoma after 5 years with large edema.

170. *Modified Spin-Echo Sequence in Tumor Diagnosis.* PETER A. RINCK, GERNOT BIELKE, AND MICHAEL MEVES, Deutsche Klinik für Diagnostik, NMR Imaging Group, P.O. Box 2149, D 6200 Wiesbaden 1, West Germany.

The Carr-Purcell pulse sequence with the Meiboom-Gill modification represents an enlarged spin-echo pulse mode for calculating  $T_2$ -dependent images and thus leads to a differentiated  $T_2$  analysis.

In our NMR imaging equipment 24 echoes are detected with a time difference of 12 msec. Either 24 single images can be calculated from the data received or several echoes can be added to one image to improve signal-to-noise ratio.

All data is obtained within a single-exposure data acquisition and processing ranges around 4.5 min. Due to the slice selection technique individual pixels in any image of the series can be directly compared.

The procedure offers several advantages: First, the  $T_2$  behavior can easily be studied because the  $T_2$  decay can be shown in a movie loop; then areas with a pathological  $T_2$  can be clearly located and delineated; and finally  $T_2$  itself can be calculated with high precision.

Clinical studies of brain tumors with the CPMG spin-echo mode especially facilitates the differentiation of the tumor itself, necrosis, and brain edema.