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1: [Clin Neuropathol](#). 2009 May-Jun;28(3):168-72.

Rosenthal fiber-rich glioblastoma: a case report.

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BACKGROUND: Rosenthal fibers (RFs) are thick, elongated, brightly eosinophilic structures occurring within astrocytic processes. Although the presence of abundant RFs within brain tumors is most closely associated with a low-grade astrocytoma, particularly pilocytic astrocytoma (PA), a few RFs are recognized to occur, although rarely, in glioblastoma (GBM). We report a very rare case of GBM with abundant RFs. **CASE REPORT:** A 60-year-old woman presented with a 6-month history of difficulty coordinating her right hand, occasional intermittent diplopia, and occasional dizzy spells. An MRI showed a heterogeneously enhancing, infiltrating mass lesion with a cystic component involving the left midbrain, thalamus, and posterior basal ganglia. Biopsy was performed. Cytologic touch imprints revealed fibrillary astrocytic cells possessing oval nuclei and long delicate processes with abundant RFs. Histologic sections showed diffusely infiltrating astrocytoma with prominent RFs diffusely distributed throughout the tumor, brisk mitotic activity, vascular proliferation, and small areas of necrosis, as seen in a GBM. The Ki-67 (MIB-1) labeling index was 7.1%. P53 immunoreactivity was not seen. A follow-up MRI study performed 3 months after the biopsy showed a considerable tumor progression with extension into the left superior cerebellar peduncle and progressive hydrocephalus. **DISCUSSION:** This is a case of RF-rich GBM (primary or de novo type). The differential diagnosis includes PA and anaplastic PA. For the histological diagnosis, infiltrating astrocytoma with abundant RFs should be carefully examined in light of clinical information (e.g., patient age, evolution of the symptoms) and neuroimaging studies.

PMID: 19537132 [PubMed - in process]
