

Delayed Radiation Necrosis With Extensive Brain Edema After Gamma Knife Radiosurgery For Multiple Cerebral Cavernous Malformations--Case Report.

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A 39-year-old man presented with multiple intracranial cavernous malformations manifesting as intractable seizures persisting for more than 20 years. He underwent gamma knife radiosurgery (GKRS) for right frontal and left temporal cavernous malformations. He began to suffer from progressive left hemiparesis and inattention 2 years 5 months after the GKRS. Magnetic resonance imaging showed abnormal ring enhancement and extensive brain edema around the right frontal lesion. Conservative therapies such as external decompression, low-dose barbiturates, and mild hypothermia had no effect on his clinical status. Stereotactic biopsy of the ring-enhanced area demonstrated gliosis. Signs of cerebral herniation appeared, so we performed partial resection of the right frontal lobe. His symptoms recovered immediately.

Subsequent hyperbaric oxygen (HBOT) therapy significantly improved the extensive brain edema. Delayed radiation necrosis associated with potentially fatal brain edema may occur after GKRS for cavernous malformations. Internal decompression and subsequent HBO therapy were very effective for the treatment of these lesions.

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