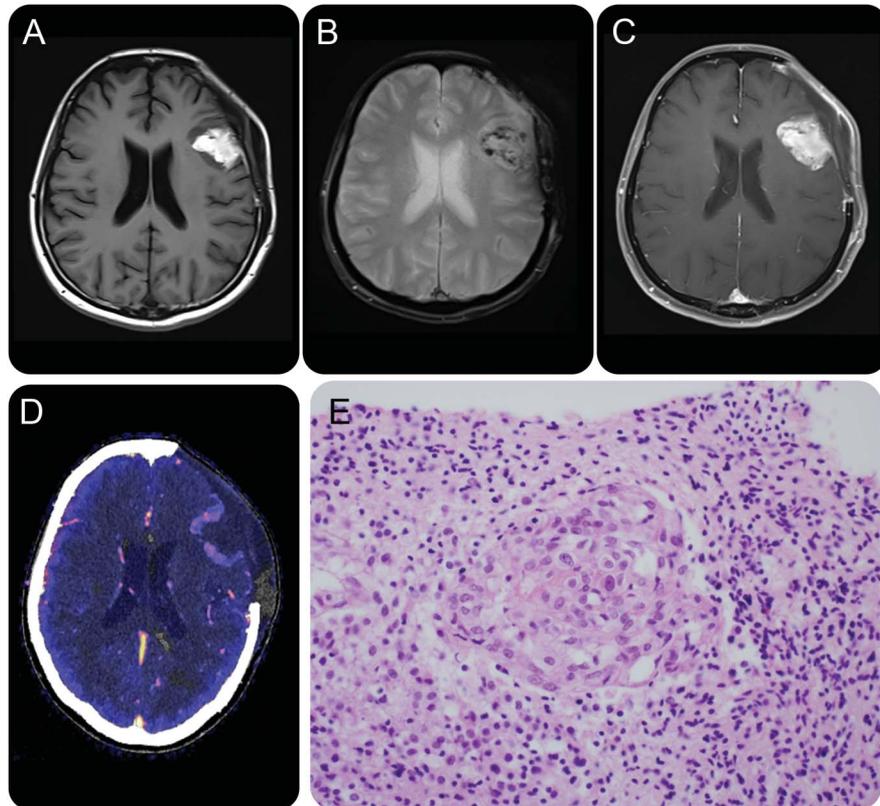


Benefit of dual-energy CT iodine overlay technique for T1-hyperintense brain lesion

Figure MRI/CT images of residual glioblastoma



Because the signal intensity at the previous resection site is hyperintense on precontrast T1 image (A) due to hemorrhage (B; T2* gradient recalled echo), it is difficult to identify the tumoral enhancement (C; postcontrast T1). However, dual-energy CT iodine-overlay image (D) reveals the previously undetectable enhancement along the periphery. Biopsy was consistent with glioblastoma multiforme (E; hematoxylin & eosin, $\times 200$).

A 47-year-old woman was admitted for radiation therapy of a left frontal glioblastoma, resected 2 months prior. On enhanced MRI, it was difficult to identify the tumor enhancement due to intrinsic T1 hyperintensity, possibly related to postoperative hemorrhage¹ (figure, A–C). However, the iodine overlay image derived from the dual-energy CT technique (figure, D) was revealing; subsequent surgical resection confirmed residual tumor cells along the region that showed the elevated iodine concentration (figure, E). The dual-energy CT iodine overlay technique may be particularly useful in the evaluation of a T1-hyperintense lesion.²

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Author contributions: Y. Lee, H. Seo, B.-K. Je, S.-D. Kim, and H. Oh were involved in the neurologic patient care and analysis and interpretation of clinical results and data. Y. Lee drafted the manuscript. H. Seo, S.-D. Kim, B.-K. Je, and H. Oh revised the manuscript. *Study funding:* No targeted funding reported.

Disclosure: The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

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Neurology 2017;89;1426-1427

DOI 10.1212/WNL.0000000000004424

This information is current as of September 25, 2017

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