



 Abramson Cancer Center of the University of Pennsylvania

## Functional MRI allows more aggressive brain tumor treatment

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NEW YORK (Reuters Health) - Preoperative functional MRI assists surgeons in treatment planning for patients with potentially resectable brain tumors, highlighting therapeutic options that surgeons might not have otherwise considered because of functional risk, according to a team at Duke University Medical Center in Durham, North Carolina.

"In certain patients, surgical time may be shortened, the extent of resection may be increased, and craniotomy size may be decreased," Dr. Jeffrey R. Petrella and his associates report in the September issue of *Radiology*.

Until now, there was little definitive evidence that functional MRI was useful for therapeutic planning in patients with brain tumors, the investigators note, even though technical and diagnostic efficacy compares well with more invasive reference standards.

In their study, the researchers prospectively evaluated the effect of preoperative functional MRI by having neurosurgeons describe their proposed treatment plan before and after receiving the results of functional MRI imaging 39 consecutive patients with potentially respectable brain tumors.

A more aggressive approach for 18 patients was planned as a result of the imaging. "Of nine patients in whom no surgery was planned, five were changed to craniotomy with mapping, two were changed to biopsy, and two remained unchanged," Dr. Petrella's team reports.

In six cases, the neurosurgeon reported that functional MRI results led to a more complete resection, whereas two patients required a smaller craniotomy than had been planned.

The surgeons also noted that surgical time was reduced by 15 to 60 minutes in 22 patients. Invasive imaging that would have been required for four patients was avoided.

Dr. Petrella and his colleagues estimate that the time required to perform an entire preoperative functional MRI session was less than 1 hour.

"Because it can be fully implemented in a busy clinical environment, functional MRI has a broad role in neurosurgical planning," the authors conclude, "including patient selection, assessment of the feasibility of surgery, and surgical planning."

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