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 1: [JBR-BTR](#). 2007 Jul-Aug;90(4):258-63.[Links](#)**Functional magnetic resonance imaging for preoperative localisation of eloquent brain areas relative to brain tumours: clinical implementation in a regional hospital.****[Geerts J](#), [Martens M](#), [Vandevenne JE](#), [Gelin G](#), [Grieten M](#), [Weyns F](#), [Stinissen P](#), [Palmer Y](#), [Wuyts J](#).**

Department of Life Sciences, Universiteit Hasselt, Biomedisch Onderzoeks-instituut en transnationale Universiteit Limburg, Diepenbeek.

The purpose of this study was to evaluate the implementation of functional magnetic resonance imaging (fMRI) for clinical use in patients with a brain tumour in the setting of a regional hospital. Twenty-three patients underwent a fMRI examination as preoperative evaluation for a tumour adjacent to an eloquent brain area. The location and distance of the tumour relative to the fMRI activation area for this eloquent brain area was determined. Presence of postoperative neurological deficits was compared to the result of the fMRI examination. The fMRI examination was not interpretable in four of the twenty-three patients. In nine patients the eloquent brain area was located more than two centimetres from the tumour: seven showed no neurological deficit postoperatively, one patient experienced a temporary deficit, and one patient has not been operated yet. In the remaining ten patients the eloquent brain area was located less than two centimetres from the tumour: after (partial) resection of the tumour often using intra-operative cortical stimulation, six patients showed no neurological deficits, and three patients had temporary or permanent deficits. One patient was not operated. The clinical implementation of fMRI was successful in the preoperative evaluation of patients with a brain tumour and useful to plan the surgical intervention and to minimize postoperative neurological deficits.

PMID: 17966241 [PubMed - in process]

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