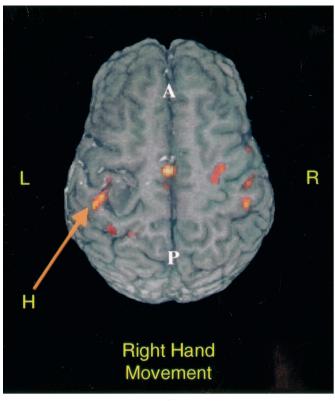
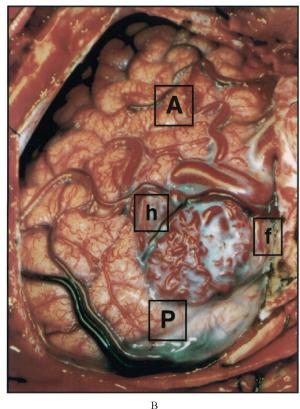
Correlation of Functional MRI with Intraoperative Cortical Mapping in Patient with Cerebral Arteriovenous Malformation

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A 21-year-old man with history of seizure disorder was diagnosed with a left posterior frontal arteriovenous malformation (AVM). Patient was neurologically intact on physical examination. Functional MRI displayed bilateral representation of right hand function. There was a small area of hand function in the lateral portion of the AVM (Fig. A, H), but most of the hand function was displaced to the contralateral hemisphere. Patient underwent intraoperative cortical mapping that revealed right hand motor representation within the lateral aspect of the AVM (Fig. B, h). There was very close correlation between functional MRI and intraoperative cortical mapping. Because of displaced brain motor function and minimal motor activity in

the area of the AVM, surgery was deemed to be of low risk and patient underwent embolization and microsurgical resection.

Postoperatively, patient was initially dysphasic and monoplegic in the right hand. Neurologic deficits completely resolved over the course of a week, and he is currently doing well. His expeditious recovery is likely secondary to displacement of the majority of right hand function to the cerebral hemisphere contralateral to the AVM. Functional MRI is a noninvasive technique that proved very useful in planning surgery for this patient's AVM in eloquent cortex.

Fig A: L, left; R, right; H, hand. Fig B: A, anterior; P, posterior; h, hand; f, face.