o8t OMNISCIENT
NEUROTECHNOLOGY

Quicktome case study
RIGHT VENTRICULAR ATRIUM TUMOR

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Patient history

A 31-year-old patient with a history of Ewing sarcoma presented with headaches, raised intracranial pressure, and papilledema. An MRI revealed a tumor in the right atrium of the right ventricle measuring approximately 2.8 cm.

Brain network involvement

Quicktome brain mapping software was used to analyze the tumor and the areas surrounding it, revealing involvement of the ventral attention network (VAN).

Ventral attention network

The ventral attention network is a unilateral, typically right hemispheric brain network responsible for swapping our focus between various tasks and responding to unexpected cues, making it pivotal to daily function.

Damage to the VAN results in hemispatial neglect, and other forms of cognitive dysfunction.

Connectome analysis of this case in Quicktome revealed that the shortest path from a parietal sulci to the tumor would risk damage to several critical areas of the VAN, including the middle parietal area, important for integrating visual input and motor action, and the parietal Area F part M, which is important for visually guided attention, language processing and decision making.

Quicktome analysis also helped to determine the appropriate sulcus for a trans-sulcal approach with a tubular retractor.

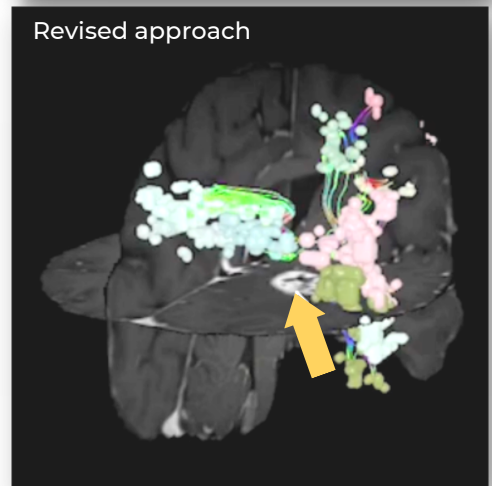## Surgical decisions and outcomes

The initial trajectory was adjusted in order to preserve the critical areas of the ventral attention network, approaching the tumor from a posterior direction. A gross total resection was achieved while avoiding both the middle interparietal area and the parietal Area F part M. The patient had intact visual spatial attention and orientation and no abnormal deficits.

Networks involved: VENTRAL ATTENTION

Initial approach
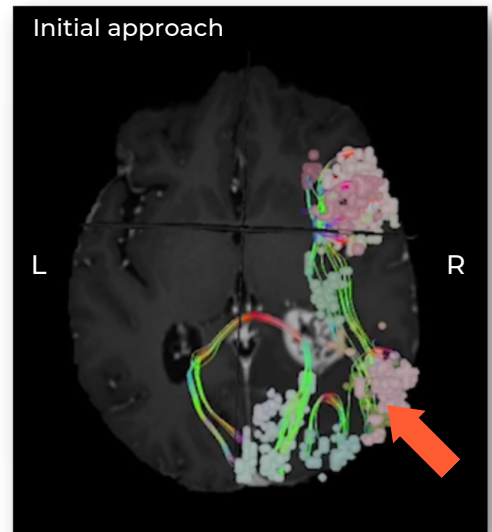
Revised approach

Post-operative scan