

Obsessive-compulsive disorder due to severe right anterior temporal lobe lesions

“Need to Know” symptomatology after disconnection between the right temporal and orbitofrontal lobe

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INTRODUCTION

- Idiopathic OCD has been linked to abnormalities in the fronto-estriado-thalamo-cortical circuitry, but few studies have examined the neural signatures of acquired OCD (A-OCD). Additionally, there are some obsessive-compulsive (OC) symptoms that have received less attention. Amongst these, one intriguing type is the so-called “need to know” (NtK), a strong drive to know and obtain given information.
- We here report the cases of two middle-aged right-handed male patients who developed “NtK” as the main OC symptomatology in association with malignant neoplasms involving the right temporal lobe and connected corticostriatal circuits.

METHODS

- Neuropsychological and psychiatric evaluation.
- Structural MRI in both patients. 18 FDG-PET was acquired in patient 1 in order to study brain metabolic abnormalities. Additionally, Tractotron and Disconnectome map softwares were used to identify white matter damage overlap across both patients and the percentage of damage (lesion load).
- The tracts of interest were: the uncinate fasciculus (UF), the anterior commissure (AC), the anterior thalamic radiations (aTR), the inferior fronto-occipital fasciculus (IFOF) and the inferior longitudinal fasciculus (ILF).

RESULTS

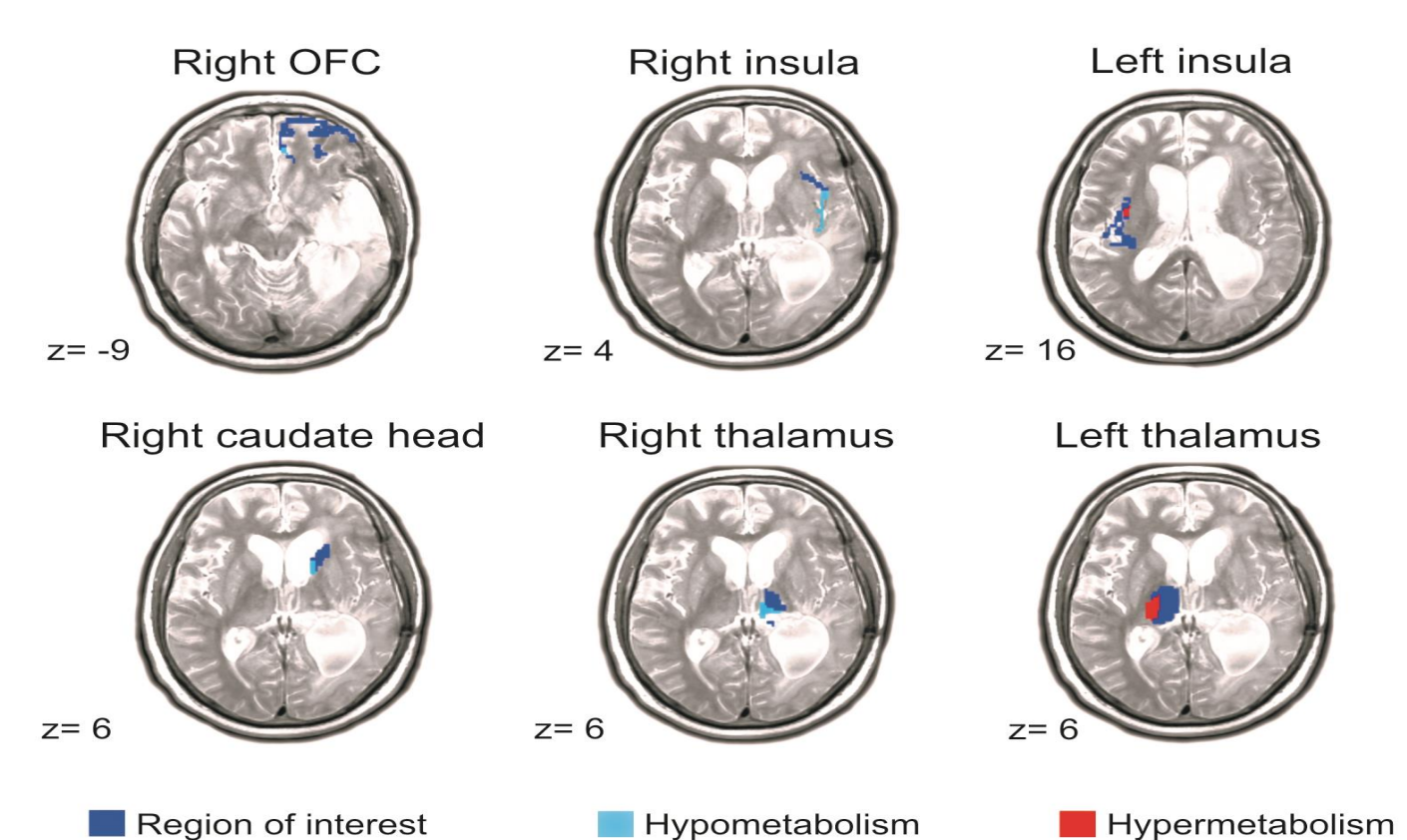
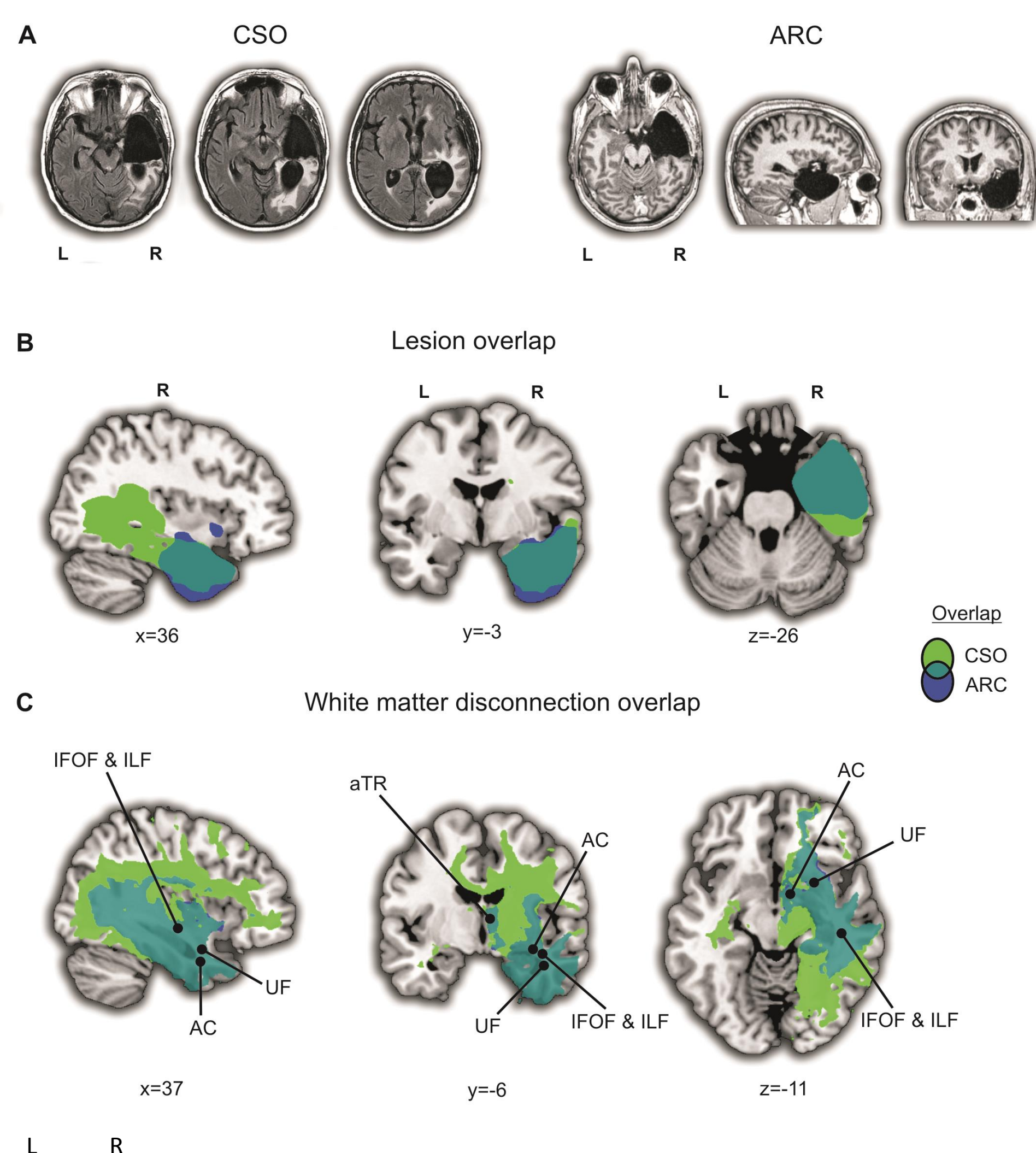


Table 1. Probability and percentage of damage of each tract of interest

Patient	Probability of damage				
	UF	AC	aTP	IFOF	ILF
1	1	0.88	1	1	1
2	1	0.96	1	1	1
Patient	Percentage of damage				
	UF	AC	aTP	IFOF	ILF
1	36.7	29.6	3.7	22.4	52.8
2	38.0	27.5	0.2	4.6	29.9

CONCLUSIONS

- The temporal lobes participate in the phenomenological expression of A-OCD.
- Our patients with lesions in the right anterior temporal lobe showed specific “NtK” symptoms.
- The expression of these symptoms, probably underpinned by impaired access to specific semantic categories (famous names and places), are mainly due to a disconnection of the uncinate fasciculus and the orbitofrontal cortex, with involvement of other components of the fronto-subcortical circuits.