

# Hyper-religiosity in frontotemporal dementia with predominant atrophy of the right temporal lobe

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## CASE DESCRIPTION

A 56-year-old Greek woman developed personality changes, presenting first with prominent hyper-religiosity alternating with periods of retardation, together with social disinhibition. For 10 months before, she had expressed extravagant religiosity, having previously been religiously indifferent. She had begun praying at home, reading Christian magazines and attending church frequently. She had also collected and decorated personal health folders with collages of religious pictures (figure 1). There were no problems with memory, facial recognition or visuospatial function.

On examination, she showed psychomotor agitation with severe inability to maintain concentration and could not focus on specific tasks. Nevertheless, she remained orientated to person, place and time, and there were no obvious focal signs.

Laboratory investigations, including routine cerebrospinal fluid studies, were normal. Electroencephalography showed mild generalised slowing (5 Hz) and a single-photon emission CT scan of brain showed decreased perfusion in the right temporal lobe and in both frontal lobes.

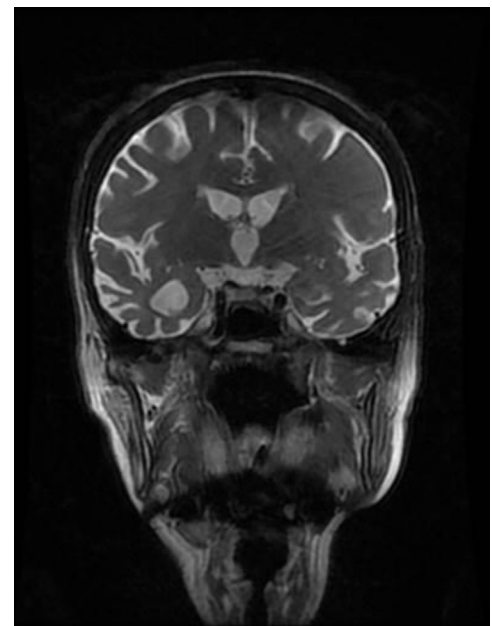
MR scan of brain confirmed predominant atrophy of right temporal lobe (figure 2).

## COMMENT

Religiosity is a complex term with a broad spectrum of behavioural and social characteristics, and its biological base remains controversial. Hyper-religiosity manifests as either a deepening of spiritual feeling with increased religious exercise or as an extravagant behaviour incompatible with personal and societal norms. It is well documented in patients with epilepsy, especially those with mesial temporal lobe epilepsy. The neurophysiological mechanism is not yet fully clarified but functional studies indicate that limbic structures are the areas most involved in emotional and religious experiences.<sup>1</sup>



**Figure 1** Saints' collage by a patient with right temporal lobe atrophy.



**Figure 2** MR scan of brain demonstrating bilateral atrophy of temporal (with right-sided predominance) and frontal lobes.



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Hyper-religiosity, as a behavioural symptom, may also develop in neurodegenerative diseases, particularly in the behavioural variant of frontotemporal dementia with predominant atrophy of the right temporal lobe, as in this case. There may be a distinct presenting phenotype, characterised mainly by prosopagnosia, episodic memory problems and behavioural changes. The characteristic neuroimaging feature is predominant atrophy of the right-sided anterior temporal lobe, although the left temporal lobe and right ventral frontal areas may also be involved. Hyper-religiosity, although described as pathognomonic in case reports, was reported by only 4% in the most recent study of people with the right temporal lobe variant of frontotemporal dementia.<sup>2</sup>

Behavioural problems along with the relative preservation of speech and language function may distract clinicians from recognising this as a neurological disorder. However, it is useful to identify these clinical features, since certain manifestations can relate to different type of proteinopathy. This may be of increasing value in the future as protein-targeting therapies become available.

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