

# Rage and aggressive behaviour in frontal lobe epilepsy: description of a case and review of the mechanisms of aggressive behaviour in epilepsy and dementia

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# ***Rage in epilepsy and dementia***

- Inappropriate and aggressive behaviours are central elements of a large number of pathological conditions, such as traumatic brain injury, schizophrenia, neurodegenerative disease or epilepsy.
- Epilepsy offers the possibility to evaluate the networks underlying these behavioral alterations, which are not yet fully understood
- Understanding the neural basis of such phenomena might help to develop novel therapeutic strategies for neurologically based aggressive behaviour.

# Case Study

- A 32-year-old woman was evaluated at the Epilepsy Unit for short daily episodes (< 1 minute duration) of an intense feeling of anger, cursing, and violent and bizarre head and limb movements
- Medical history of epilepsy with nocturnal focal to bilateral tonic-clonic seizures, partially controlled with carbamazepine and phenobarbital (1 seizure/year)
- Negative psychiatric history
- Normal neurological, psychiatric and general physical examination



- Diagnosis of drug-resistant focal epilepsy, symptomatic of right dorsolateral prefrontal FCD
- Epilepsy Surgery → seizure freedom (six years of follow-up - Engel's Class Ia)

### ***Take Home Message:***

- During focal seizures, ictal emotional changes are common and may be misdiagnosed as paroxysmal psychiatric disturbances, particularly when associated with bizarre motor phenomena. It is important to consider such features in order to avoid diagnostic errors and therapeutic failure.
- Aggressive behaviours depend on the dysfunction of a large neuronal network, that includes, among other brain structures, the dorso-lateral prefrontal cortex.