





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

Roberta Di Giacomo^{1a}, Giuseppe Didato^{1a}, Vincenzo Belcastro², Francesco Deleo¹, Chiara Pastori¹, Dario Arnaldi^{3,4}, Giuseppa Jolanda Rosa⁵, Flavio Villani^{1,3}

- ¹ Epilepsy Unit, Fondazione IRCCS Istituto Neurologico Carlo Besta, Milan, Italy
- ² Neurology Unit, Maggiore Hospital, Lodi, Italy
- ³ Division of Clinical Neurophysiology and Epilepsy Center, IRCCS Ospedale Policlinico San Martino, Genova, Italy
- ⁴ Neurology Clinic, University of Genova Medical School, Ospedale Policlinico IRCCS San Martino, Genova, Italy
- ⁵ Neurology Clinic, Department of Neurosciences and Rehabilitation, University of Ferrara, Italy



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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.

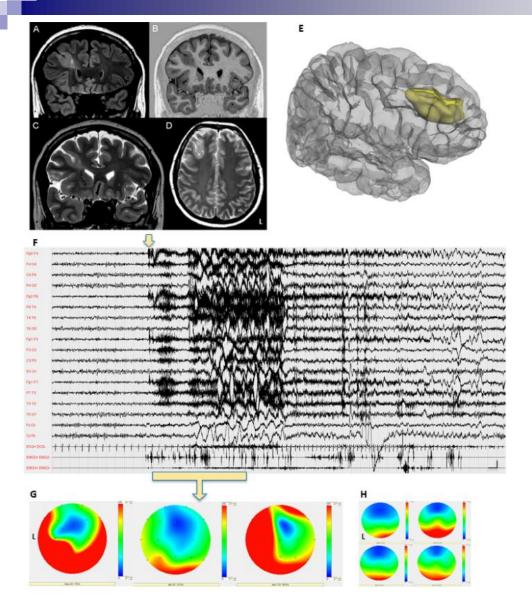


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Case Study

- 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 bizzarre head and limb movements
- Medical history of epilepsy with nocturnal focal to bilateral tonicclonic seizures, partially controlled with carbamazepine and phenobarbital (1 seizure/year)
- Negative psychiatric history
- Normal neurological, psychiatric and general physical examination







 MRI: focal cortical dysplasia in the right dorsolateral prefrontal cortex.

- Long term video-EEG:
 captured several
 stereotyped self-limited
 events, characterized by
 paroxysmal rage and
 aggressive behavior, and
 preserved awareness.
 - maps: frontal regions showed asymmetrical distribution of spectral power for distinct frequency bands during the first ten seconds of the seizure.

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

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.

