

## Did Joan of Arc and Saint Paul suffer from epilepsy?

In February 2016, I read an article written by two Swiss neurologists trying to demonstrate that Joan of Arc's and Saint Paul's visual and auditory experiences were all manifestations of underlying epilepsy. The article was published in the renowned academic journal "Epilepsy and Behavior". On reading the article, I had the impression that our colleagues' argumentation was biased as they did not mention the evidence that clearly speak against their theory. I therefore decided to write a letter to the Editor-in-Chief of the journal to convey my personal thoughts which are summarized below.

Concerning Joan of Arc, it is said that she heard voices and saw images of the Archangel Saint Michael two or three times per week and at times daily. If she had the genetic epilepsy called "idiopathic partial epilepsy with auditory features (IPEAF)" as stated by the Swiss neurologists, the seizures manifesting as auditory of visual hallucinations would not be so frequent. Indeed, it is known that IPEAF is benign epilepsy causing less than 3 seizures per year in 90% of patients. Another more surprising element is that the content of Joan of Arc's auditory and visual perceptions was so coherent that they guided her actions throughout her life. This is the opposite of what we usually see with epileptic patients. When they have auditory or visual hallucinations, what they see or hear is always completely incoherent and has no relation with their immediate real life. This makes the difference between visions and hallucinations.

Coming to Saint Paul, our Swiss colleagues stated that his fall and loss of vision on the road of Damascus (Epistle to the Corinthians, Chapter 12, verse 7 – 10) was the initial manifestation of a temporal lobe epilepsy (a type of epilepsy in which seizures originate in the temporal lobe, one of the four major lobes of the brain). However, we know from our clinical experience that seizures manifesting as blindness are rare in adults and occur most often in children before adolescence. Moreover, if a seizure lasts for more than 5 minutes, there is a great probability that it is related to a serious disease or damage of the brain (tumours or malformations or infections), that it will not stop without treatment and that it will recur in the following hours or days (especially if not adequately managed). Surprisingly, Saint Paul's blindness lasted 3 days, resolved without any medical treatment and did not recur at any other time in his entire life making it highly unlikely that it was due to epilepsy resulting from a serious disease of the brain.

Our Swiss colleagues could also argue that Saint Paul's blindness was an aftermath of a seizure. Indeed, it is frequent for some patients with epilepsy to have some motor or sensory deficits after a seizure. These deficits occurring after a seizure are designated by the umbrella term "Todd's phenomenon". A study published in 1992 by the American physician Dr Loren ROLAK showed that the average duration of a Todd's phenomenon is 15 hours with rare cases lasting up to 36 hours. It is therefore highly probable that Saint Paul's three-day blindness was not a Todd's phenomenon either.

To conclude, I would say that, while some features of the visual and auditory phenomena

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experienced by Joan of Arc and Saint Paul could be interpreted as being of epileptic origin, there are also strong scientific arguments against the epilepsy theory and without factual medical assessment – which we will obviously never obtain – it is not possible to give a definitive conclusion to the debate.

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