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Epileptic consciousness: Concept and meaning of aura

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Abstract

This research is based on previous publications that have analyzed certain neuropsychological phenomena that always have the same characteristic clinical features: a vivid experience of sudden onset and automatic development, accompanied by an intense sensation of strangeness. When these automatisms are accompanied by only mental symptoms, the designation *paroxysmal psychic automatisms* (PPAs) is proposed, and they should be interpreted as partial seizures (PSs) with a psychic content whenever they clearly exhibit the four features of suddenness, passivity, intensity, and strangeness. This interpretation is based on the existence of a wealth of scientific literature indicating an overlap between PPAs and PSs; moreover, bibliographic reviews indicate that the clinical signs just defined as characterizing PPAs are precisely those defining the epileptic consciousness.

Keywords: Automatism; Panic attacks; Partial seizure; Paroxysm; Strangeness

1. Introduction

In previous studies [1,2] we analyzed a number of neuropsychological phenomena with very characteristic clinical features that are always repeated in the same unvarying way: suddenness, passivity or automatism, great intensity, and strangeness. These automatisms are sometimes of an exclusively psychic nature, with purely mental manifestations, in which case the designation *paroxysmal psychic automatisms* (PPAs) is proposed.

Perhaps the best way to explain the type of phenomenon in question is by means of an example of a PPA, which occurs so frequently among the normal population that many of us surely have experienced it: déjà vu, a psychic experience in which a person has the intense conviction of having been through exactly what is happening now in the past. Déjà vu is a paramnesia affecting no less than half of the normal population, and it has the four features we have just described as characteristic of and defining a PPA: it is sudden, completely passively received (automatic), very intense, and charged with an incomprehensible strangeness.

Psychiatric practice recognizes a great variety of psychic phenomena with these clinical features, and in light of their frequency and content, the following list of PPAs may be drawn up:

1. *Cognitive automatisms*: As well as déjà vu, or false memory, already given as a paradigmatic example, mention may be made of the following:
   a. Forced thinking: This involves Penfield's intellectual aura and is known in psychiatric practice as primary delusional idea [3], where a sudden thought imposes itself on one's awareness with such force that it gives the impression of certainty and, occasionally, even of clairvoyance.
   b. Depersonalization: The subject suddenly has the vivid impression of observing him- or herself as wholly or partially different from normal, despite knowing that

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the sense organs are working properly. This experience, on the borderline between the cognitive and the affective, is always accompanied by strangeness and anguish.

c. Derealization: This is similar to depersonalization, but it is the surroundings, not the self, that are suddenly changed.

2. *Affective automatisms*:
   a. Panic: An attack of anguish and terror suddenly takes over the consciousness with such intensity that the subject has the impression she or he is losing control of the situation, which will have a terrible end, perhaps madness or even death.
   b. Sadness: Here the paroxysmal experience consists of a sudden psychic pain invading the awareness completely and for no apparent reason, the sorrow being inexplicable even for the subject suffering it.
   c. Joy: Joy is the opposite of sadness; it is a state of intense bliss with no apparent cause, and it takes over the consciousness passively for a few short moments, filling it with awe and strangeness.
   d. Alternation of opposite affective experiences: An example is rapid and automatic alternation between joy and sadness.
3. *Perceptive automatisms*: These are hallucination-like phenomena that suddenly and with great force impose themselves on the consciousness. They are often so intense that they are accompanied by a strong conviction of truth, so they should be considered real delusional hallucinations.

So far, these psychic phenomena have constituted a gray area between psychiatry and neurology, sometimes being diagnosed as symptoms of different psychiatric disorders and sometimes as PSs. Indeed, the mental phenomena just described are often interpreted as symptoms of diverse psychiatric disorders. Hallucinations and primary delusional ideas are two of the characteristic symptoms of acute psychoses, more specifically of an acute thrust of paranoid schizophrenia, and are usually diagnosed as such. In turn, depersonalization and derealization are the essential clinical symptoms of depersonalization disorder. Panic attacks are regularly diagnosed as panic disorder. Painful experiences are often interpreted as symptoms of a melancholic depression, while the opposite joyful experiences are included in the manic phase of bipolar disorder. Finally, rapidly and automatically alternating experiences of joy and suffering are often diagnosed as rapidly cycling bipolar disorder.

All these psychic phenomena may just as easily have an epileptic origin, and they are often diagnosed as epileptic auras. Indeed, Devinsky and Luciano [4] list the following mental manifestations as being of an ictal nature: derealization, depersonalization, dissociation, mystic or religious experiences, forced thinking, distortion of time, déjà vu, jamais vu, fear, depression, anger, pleasure, laughter (gelastic seizures), crying (dacrystic seizures), and visual and auditory hallucinations. For these authors, unlike normal phenomena, which are associated with an appropriate environmental setting or stimulus, ictal emotions are paroxysmal and spontaneous.

For their part, Silberman et al. [5] list the following psychic auras in temporal lobe epilepsies (with the frequency in parentheses): thought and speech disturbances (99%); motor automatisms (86%); hallucinations (71%); sensory illusions and distortions (33%); such cognitive illusions as déjà vu, jamais vu, and illusions of significance (24%); affective paroxysms such as fear, sadness, rage, euphoria, and sexual ones (14%); and time distortions (5%). Finally, Munksgaard [6] offers the following list of PSs with a psychic content: intense, unprecipitated and suddenly remitting episodic affective disturbances involving feelings of anxiety, depression, or rage; suicidal ideation; episodic irritability; and intrusive thoughts.

Through this study we aim to put an end to the lack of diagnostic definition surrounding these psychic phenomena, proposing, when they clearly have the four clinical signs outlined previously (suddenness, automatism, great intensity, and strangeness), that they should be interpreted as simple partial seizures (SPSs) with a psychic content.

2. Methodology

This interpretation is based on reviews of the literature, in which clinical, therapeutic, EEG, and neuroimaging evidence supports the hypothesis of an overlap between PPAs and SPSs. Reviews apart, however, the clinical signs of PPAs mentioned—automatism, suddenness, great intensity, and a strong feeling of strangeness—also happen to be those characterizing and defining the epileptic aura. Therefore, from the point of view of methodology, this study comprises two parts:

1. A bibliographical review of publications in the fields of neurology, psychiatry, and epileptology in search of an overlap between PPAs and epilepsy.
2. A detailed analysis of the concept of aura, which will enable us to highlight the overlap between the clinical signs characterizing the aura and those characterizing PPAs.

3. Epidemiological, clinical, EEG, neuroimaging, and therapeutic data correlating PPAs and epilepsy

The first major argument in favor of an overlap between epilepsy and the aforementioned psychiatric symptoms is their high comorbidity, which has been established for some years. In their epidemiological study on this question, Jallon and Vuilleumier [7] state that the overall incidence of psychiatric disturbances among patients with epilepsy may be reckoned to be around 20–30%.

Moreover, many relevant publications link each of the symptoms we have called PPAs with epilepsy: a wide range of literature relates déjà vu with epilepsy [8–10]. Porter [11]