



Genital and sexual manifestations in drug-resistant partial epilepsy

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Summary Genital and sexual manifestations represent rare clinical phenomena during or after focal seizures. The semiology of these types of automatisms is controversial. In particular, it is unclear whether temporal or frontal structures are involved in their generation and whether these clinical manifestations have a potential lateralizing value. In this view, from a population of 212 consecutive patients with drug resistant focal epilepsy referred to us for presurgical assessment, we retrospectively identified 24 patients with genital ictal manifestations. We evaluated the incidence of these behaviours, the clinical semiology, the associated symptoms/signs with the corresponding ictal EEG findings and their potential role in lateralizing the epileptogenic zone. Our results indicate that ictal genital automatisms are possible in seizures originating from temporal lobe and they cannot be attributed exclusively to frontal lobe seizures. In particular, the most frequent genital automatisms consist in subtle phenomena while hypermotoric behaviour, such as pelvic rhythmic movements are quite rare. No lateralizing value for genital automatisms was disclosed.

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1. Introduction

Genital and sexual manifestations represent rare clinical phenomena during or after focal seizures and, according to Leutmezer,¹ can be subdivided in

sexual auras, sexual automatisms, genital auras, and genital automatisms where the adjective “sexual” refers to the symptoms/signs with erotic content while the term “genital” refers to symptoms/signs involving genitals without erotic components. Although many studies focused on ictal automatic behaviour such as oro-alimentary or motor automatisms, often disclosing a role in lateralizing or localizing the epileptic focus, few studies have been

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addressed to investigate sexual and genital automatisms.

The semiology of these types of automatisms is controversial. In particular, it is unclear whether temporal or frontal structures are involved in their generation and whether these clinical manifestations have a potential lateralizing value.

Some authors^{2,3} support that sexual automatisms, such as hypermotoric activities like trusting and kicking, sometimes combined with manipulation of the genitals, were related to seizure of frontal lobe origin. Other investigators reported that sexual automatisms^{4,5} or erotic ictal manifestations, such as sexual arousal or orgasmic aura,^{6,7} predominate in female patients with temporal lobe epilepsy (TLE), mainly when the focus was right-sided.

A recent report¹ stressed that sexual hypermotoric pelvic or truncal movements are common in frontal lobe seizures, while subtle genital automatisms, like fondling and grabbing the genitals, are more typical of a temporal lobe seizure onset.

We studied seizures with sexual or genital ictal manifestations recorded in a group of 212 consecutive patients with drug resistant partial epilepsy evaluated for epilepsy surgery, in order to analyze: (I) the incidence of these behaviours; (II) the clinical semiology; (III) the associated symptoms/signs and the corresponding ictal EEG findings; (IV) their potential role in lateralizing the epileptogenic zone.

2. Patients and methods

2.1. Patients

We retrospectively studied a series of 212 consecutive patients with focal epilepsy referred to us for presurgical assessment for medically refractory seizures. There were 81 females and 131 males. Their mean age was 33.2 (S.D. \pm 19) and the mean duration of their epilepsy was 18.3 years (S.D. = 9.7, range: 1–46). They were referred to the Epilepsy Surgery Unit (ESU) of IRCCS NEUROMED, Pozzilli (IS), Italy, between September 1998 and November 2002.

2.2. Pre-surgical diagnostic protocol

All patients underwent the non-invasive pre-surgical protocol described in detail previously.⁸ The protocol included (1) detailed medical history and clinical examination; (2) continuous long-term intensive, diurnal and nocturnal, Video-EEG monitoring (Telefactor Corp., Conshohocken, PA); (3) neuropsychological evaluation; (4) psychiatric evaluation; and (5) computed tomography (CT) scan and morphologic

magnetic resonance imaging (MRI). In six patients, a unilateral or bilateral intracarotid sodium amytal test (Wada test) was also performed to assess the risk for global amnesia after a temporal lobectomy. The Video-EEG recording technique, performed by collodion fixed scalp electrodes (International 10–20 System), was in accordance with international guidelines developed by the American Electroencephalographic Society for Video-EEG monitoring in epileptic patients (American Electroencephalography Society, 1986). Scalp EEG analysis was done using bipolar longitudinal-transverse and referential montages.

The EEG recording of each patient was examined in order to evaluate the presence of background abnormalities, both slow and epileptiform interictal activity, ictal discharges and post-ictal slowing. The onset of the ictal discharge was defined as the first ictal EEG change which lasted at least 3 s and was localised over, or lateralised to, the side of the epileptogenic zone.⁹ This was analysed by two examiners (AM, PPQ) separately. They used a high definition monitor (2024 \times 1860 d/i) and two filter settings (LFF 1.3 and HFF 50 Hz).

2.3. Analysis of sexual and genital automatisms

All videotapes were reviewed by two examiners (AM, PPQ) who were blind to each other's EEG findings, history and seizure outcome, in order to detect seizures with genital or sexual behaviours and to evaluate their electro-clinical semiology. In instances of disagreements between the examiners, a final consensus was achieved after discussion. For each seizure included in the study we considered the following data:

- (1) *Clinical semiology*; according to Leutmezer,¹ we subdivided the sexual and genital manifestations in: (I) sexual auras, in which the main referred feeling is sexual pleasure; (II) sexual automatisms, in which the observed automatic behaviour delineates a sexual content (i.e. masturbation, exhibition, pelvic coital movements, etc.); (III) genital auras, in which the main referred feeling is in terms of somatic sensation at genital level without erotic content (i.e. pruritus, paresthesias, etc.); (IV) genital automatisms, in which the automatic behaviour involve genitals without erotic contents (i.e. fondling, grabbing, etc.).
- (2) *Occurrence time* of these phenomena during seizures; in order to minimise the bias related to the different seizures duration, according to Kotagal¹⁰ we divided the whole seizure in three

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