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A case of a 'rude' but not to be missed manifestation of epilepsy: ictal swearing

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Abstract

Swearing is described in various neurological conditions such as Tourette syndrome, Lesch–Nyhan syndrome and post stroke or encephalitis. However, swearing as an ictal manifestation or automatism has rarely been reported. We herein describe a case with swearing as a predominant manifestation in focal epilepsy.

Keywords: electroencephalogram, epilepsy, ictal swearing, positron emission tomography

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Introduction

Swearing or profanity is offensive language, which can be vulgar or curse words or phrases deemed inappropriate for formal conversations. It has been deeply rooted in our community and seen as a common human act. In fact, swearing is described in various neurological conditions, such as Tourette syndrome, Lesch–Nyhan syndrome and post stroke or encephalitis. Swearing has been reported in a few cases as an ictal manifestation, despite this its exact pathophysiology remaining elusive.[1–3] In this paper, we describe a case with swearing as a predominant manifestation of epilepsy with a left (dominant) hemisphere origin, in contrast to previously reported cases with a nondominant hemisphere origin.

Case presentation

A 35-year-old right-handed male presented to our epilepsy clinic for a second opinion. He first presented with generalised tonic–clonic seizures at 13 years of age, which were gradually controlled with antiepileptic drugs (AEDs). After approximately 3 years of the diagnosis, he was found to start blurting out vulgar words. This occurred mostly when he was sleeping and occasionally in the daytime. He, however, could not recollect himself profaning. The collateral history given by his family revealed that the patient would appear dazed briefly preceding the swearing. He usually resumed his conversation or regained consciousness quite immediately after he swore. He reported no abnormal sensations after the attack. The frequency of swearing ranged from two to three times a day to a week, with each episode lasting approximately 4–5 s. This inappropriate behaviour in public caused him to be dismissed from several jobs.

There was no other significant medical or surgical history of note. Perinatal history was uneventful and his developmental milestones were attained normally. He reported no history of febrile convulsions. He was a teetotaler and had never abused drugs. There was no family history of epilepsy. Neurological examination and other system reviews were unremarkable. His blood investigations were essentially within normal limits. Handedness questionnaire showed that he was an absolute right hander. A 3-T MRI with 1-mm slice thickness revealed no appreciable abnormalities on T1 and T2 sequences. Positron emission tomography (PET) results were normal. Routine scalp electroencephalogram (EEG) disclosed neither interictal discharges nor focal slowing.

From the scalp video EEG monitoring performed at our hospital, he had four stereotypical episodes of swearing the same utterance, which lasted about 4 s. Two of which happened while he was sleeping and appeared confused briefly when approached by the technician. The third episode occurred while he was eating a chocolate bar. After swearing, he became confused for a brief period but mastication somehow continued. We did not detect any ictal changes during these very brief three attacks. The fourth attack took place when he was watching the television programme. Left hand fumbling was seen along with the swearing, followed by

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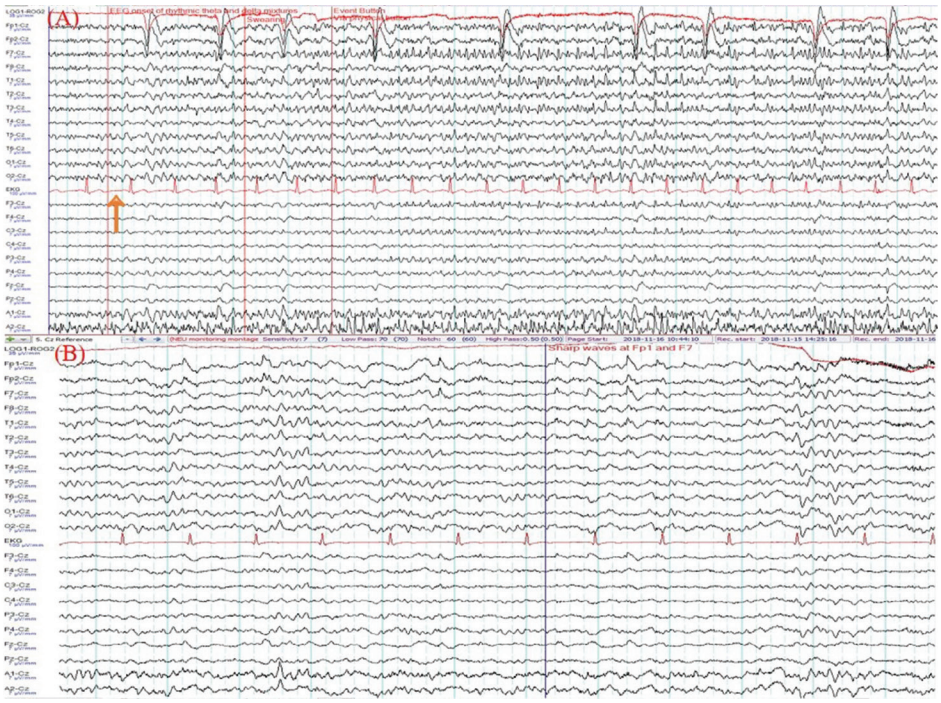

Figure 1 (a) Ictal electroencephalogram (EEG) reveals rhythmic delta and theta activities, which are followed by 6–8 Hz rhythmic spikes at F7 and T1. Arrow shows the ictal EEG onset. (b) Interictal EEG reveals sharp waves at Fp1 and F7

post-ictal nose wiping with his left hand. During this attack, EEG showed rhythmic theta and delta activities, which were followed by 6–8 Hz rhythmic spikes at the F7 and T1 electrodes (Figure 1a). This suggested an ictal onset from the left anterior temporal region. From the interictal recording, there were intermittent sharp waves arising from the left frontal region (Fp1 and F7) in keeping with left frontal lobe epilepsy (Figure 1b). No convulsive or jerky movements were recorded.

The patient declined further tests such as intracranial electrography and wished to be treated with medical therapy alone. We managed to control his seizures with five AEDs.

Discussion

We present a case with complex automatisms and predominant ictal swearing in focal epilepsy. Based on the latest searchable case series and review on 10 patients, ictal swearing commonly occurs in men and lateralises to the nondominant hemisphere. It has, however, a poor localisation value, as the mesial temporal, frontal, parietal and parieto-occipital lobes have been involved.[1] From this series, the youngest seizure onset was at 2 years of age. It would have been more interesting if this case series had detailed the age gap between the symptom onset and established diagnosis. In our case, it took him almost 19 years to reach the diagnosis. This reflects the complexity and difficulty in diagnosing this rare manifestation; and the social stigmata and stress one has to undergo due to this uncontrollably impolite act. On a side note, it would be worthwhile noting the details of the swearing contents, ethnic or cultural background, which might be instrumental in gaining further insight into the phenomena of ictal swearing. Our patient repeated the same obscene utterance (‘fuck’ in Korean) four to five times in each attack in all recorded events.

Male subject and frontal lobe involvement are the only two findings in our report, which are in line with the aforementioned case series. Despite the discordance between the interictal and ictal EEG lateralisations (with the formal showing left frontal lobe and the latter showing left anterior temporal lobe involvement), our case clearly demonstrates left-sided (dominant) hemisphere involvement when he swears, which is a contradictory finding to all previous reported cases. Swearing is considered a form of emotional or compulsive speech. Most authors posit that ictal swearing comes directly from the right (nondominant) hemisphere as evidenced by intact swearing in severe aphasia due to left hemisphere injury or post left hemispherectomy.[4] Driver et al.[5] proposed that ictal speech might due to release of the dominant sphere from the inhibition of the nondominant sphere. We hypothesised that ictal profanity involves a wide, complex and possibly dynamic neuronal network linking different regions in both hemispheres instead of a specific cortical region. This network might differ between each individual. Support for this hypothesis would be a case report of ictal singing in left (dominant) frontal lobe epilepsy, which is in contrast to most reported right-hemispheric involvement.[6] This is also why different brain lobes have been found to be the epileptogenic focus. Furthermore, most patients with ictal profanity are pharmacoresistant, supporting the wide variance of involved areas. Interestingly, only males are involved in all cases of ictal swearing. It could be surmised that men express emotions by swearing more often than women.

Conclusion

Ictal swearing is a rare, yet important manifestation of epilepsy. Patter recognition as well as detailed history taking is required to avoid diagnosis and treatment delay. Further studies on ictal swearing or other forms of ictal speech are encouraged to yield more robust conclusions.

Informed consent

Written informed consent for the paper to be published (including images, case history and data) was obtained from the patient/guardian for publication of this paper, including accompanying images.

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