Seizures induced by animated cartoon TV program "Pocket Monster": a follow up survey

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Purpose To investigate the outcome of patients who had seizures while watching the animated cartoon TV program "Pocket Monster" in the evening of December 16, 1997 in Japan Methods From questionnaire survey conducted in and around Aichi prefecture, 111 patients appeared to have some manifestations associated with the TV program. Among them, 28 patients had had unprovoked epileptic seizures before the incident (Epilepsy Group) and the remaining 83 did not (Non-Epilepsy Group). We made follow up studies twice, 1 and 3 years after the incident, with questionnaire that asked the physicians of each patient about seizure recurrence, EEG findings and medication. Results Information was available for 110 patients (109 patients for 1 year follow up and 72 for 3 years). Of 82 patients of Non-Epilepsy Group, 9 (11%) had epileptic seizures after the "Pokemon" incident, while 16 of 28 (57%) patients of Epilepsy Group had seizure recurrence (p <0.0001). Of 9 patients of Non-Epilepsy Group who had seizures after the incident, 3 patients began to have unprovoked recurrent seizures. The remaining 6 patients had a visually induced seizure, and after the recurrence remained free of seizures without any medication. Medication with valproate was stared immediately after the incident in only 3 (4%) of 73 patients of Non-Epilepsy Group who did not have any seizures after the incident.Conclusion The cartoon TV program at the incident induced epileptic seizures in many persons who might not have had the fit if they had not been exposed to the highly epileptogenic visual stimuli.

Electrophysiological study in patients with seizures induced by electronic screen games (ESGs)

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We performed electrophysiological examinations in 18 patients who had seizures induced by electronic screen games (ESGs). Electroencephalographies were recorded while playing ESGs and under photic stimulation for all cases. In 9 patients paroxysmal discharges appeared while playing ESGs, and 6 of these showed photo paroxysmal responses. In these 6 patients (Cases 7, 13, 14, 15, 16, 17), photo-sensitivity was supposed to be a main precipitating factor for seizures. A 10-year-old boy (Case 13) had convulsions while playing a specific action game. Further examinations revealed that his paroxysmal discharges were triggered by a scene of red flickering light. After three years, his paroxysmal discharge, which occurred at the scene of a red flickering light, has reduced gradually. Two patients (Cases 5, 10) had other precipitating factors of ESGs. A 17-year-old boy (Case 5) had seizures while playing puzzle-games and also when playing Japanese chess ("Shogi").

We suggest that cognitive processes, such as thinking or looking at a specific configuration, precipitates paroxysmal activities in Case 5. A 15-year-old boy (Case 10) had seizures while playing action games and the piano. As for this case, rapid movements of fingers are thought to be related to precipitation of paroxysmal activities. Previous reports indicated that there were many precipitating factors which induced clinical seizures while playing ESGs, and photo-sensitivity was supposed to reduce gradually as the years pass. Our study of Case 13 is consistent with previous reports. The determination of precipitating factors is important to determine the treatment of seizures induced by ESGs.