

Clinical pattern of partial epilepsy in Sudanese patients

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Abstract

Objective: To study the pattern of clinical presentation of partial epilepsy among Sudanese epileptic patients attending Elshaab Teaching Hospital from May 2005 to March 2006.

Introduction: Seizures are categorized as partial (with the initial activation of a limited number of neurons in a part of one hemisphere) or generalized (with the initial activation of neurons throughout both hemispheres).

Setting: The study was conducted at Elshaab Teaching Hospital

Duration: May 2005– March 2006.

Design: Fifty patients with partial were included in a prospective cross-sectional hospital-based-study.

Results: The mean age is 35.96 years. Male to female ratio was 1.4:1. Abdominal aura predominates in 12%, followed by autonomic symptoms in 8%, fear in 6%, anxiety and visual hallucination in 4%, olfactory hallucination, auditory hallucination and automatism in 2%. Postictal confusion was found in 16% followed by post ictal sleep and Todd's paralysis in 8%, headache in 6% and amnesia in 4%. Abnormal neurological signs found in 30%. Space occupying lesions in 22% and cerebrovascular accident in 20% are the commonest causes for partial epilepsy, followed by brain atrophy in 6%, and arteriovenous malformation in 2% as detected by MRI. EEG was found abnormal in 56% i.e. 42% focal discharge, 10% focal discharge with secondary generalization and 4% generalized discharge.

Conclusion: Prodromal symptoms like abdominal pain nausea and vomiting were the commonest symptoms in partial epilepsy. Confusion, sleep, Todd's paralysis, headache and amnesia were the commonest post ictal symptoms. Brain MRI detected space-occupying lesions in most of the patients. Interictal epileptic focal discharges (IEDs) were detected in more than half of the studied population.

Key words: Seizer, partial epilepsy, neurological sign, Sudan

Introduction

Seizures result from paroxysmal and excessive electrical neuronal discharges in the brain that cause a variety of clinical manifestations⁽¹⁾. The term "epilepsy" is usually restricted to those cases with a tendency for recurrent seizures. The term "epilepsy" encompasses a group of syndromes that vary in its associated pathology and seizure types^(2,3). The diagnosis of the epileptic syndrome is one of the primary objectives undertaken when managing a patient with seizures. Seizures that

begin in a focal region of the cerebral cortex, often within one lobe of the brain, are termed partial seizures. This is in distinction to seizures that involve both cerebral hemispheres at the onset, which are termed generalized (or primarily generalized) seizures⁽⁴⁾. These distinctions are based on clinical and EEG findings.

Objectives

To study the pattern and clinical presentation of partial epilepsy among Sudanese patients attending

Elshaab Teaching Hospital from May 2005 to March 2006.

Patients and methods

This is a prospective cross-sectional hospital based study.

Study area: The study was conducted in Elshaab Teaching Hospital from May 2005 to March 2006. Elshaab Teaching Hospital is a tertiary hospital, receives patients from all the country. Located in the centre of Khartoum town. It is a big hospital with 243 beds.

Study population: The study population consisted of 50 cases with partial epilepsy. *Sample size:* All patients admitted or attended referred clinic in Elshaab Teaching Hospital were included.

Inclusion criteria: Adult Sudanese patients with partial epilepsy.

Exclusion criteria: Patients with primary generalized epilepsy and patients below the age of 16 years.

Data collection: Data was collected by self-administered questionnaire composed of personal data, full detailed history and examination, EEG, MRI findings and laboratory investigations.

Data analysis: All collected data was finally entered the computer using statistical package program for social science (SPSS) to analyze the data.

Results

Out of 50 patients 29 (58%) were males and 21 (42%) were females ($P=0.258$). Age distribution ranged between 16–70 years, mean age is 35.96 years. Only four patients (8%) have positive family history. It was found that 26 patients (52%) have simple partial epilepsy, 12 (24%) have secondary generalized epilepsy and 12 (24%) have complex partial epilepsy. It was found that out of 50 patients 27 (54%) their event duration took about 1–2 minutes, whereas 16 (32%) patients their event took about 2–5 minutes and 7 (14%) patients their event

took more than 5 minutes. Prodromal symptoms were detected in 16 patients (32%). The study showed that 6 (12%) patients have gustatory aura, 3 (6%) have fear, 4 (8%) have autonomic symptoms, 2 (4%) have anxiety, 2 (4%) have visual hallucination, 1 (2%) has a factory hallucination, 1 (2%) has auditory hallucination and 1 (2%) has automatism. Eight patients (16%) have postictal confusion, 4 (8%) have postictal sleep, 4 (8%) have Todd's paralysis, 3 (6%) have post ictal headache and 2 (4%) patients have postictal amnesia, whereas 34 (68%) have normal post ictal period. The study showed that 15 (30%) patients have abnormal neurological signs, 11 (22%) have hemiparesis, 6 (12%) have facial palsy, 2 (4%) have optic atrophy, 2 (4%) have hearing impairment and 1 (2%) has papilloedema. Abnormal EEG was detected in 28 (56%) patients, 21 (42%) have focal discharge, 5 (10%) have focal discharge with secondary generalization and 2 (4%) have generalized discharge. Abnormal findings on brain MRI was found in 24 (48%) patients, 7 (14%) have cerebral infarction, 3 (6%) have cerebral hemorrhage, 4 (8%) have meningioma, 2 (4%) have tuberculoma, 3 (6%) have brain atrophy, 1 (2%) have glioma, 1 (2%) have brain abscess, 1 (2%) have hydatid cyst, 1 (2%) have subdural haematoma and 1 (2%) have arteriovenous malformation.

Discussion

The study showed that males (58%) are more affected than females (38%). This is similar to study done in Sudan by Abbashar Hussein⁽⁵⁾. Also it is not differ from what had been mentioned in the literature^(6,7). The reason for this is not known, but it seems that some of the risk factors are more common in males than female like trauma, brain infection and alcohol consumption, In addition to that, in our country epilepsy is stigma, so possibly females avoid coming to hospital^(8,9). It appears that about 2/3 of the patients lie in the age group

(16-45) years. This is differed from what had been reported in the literature, as focal epilepsy usually affects elderly people more^(10,11). The study showed that only 4 patients (8%) had a family history of epilepsy, this low percentage could be due to the fact that, partial epilepsy is usually due to the underlying structural brain lesion, in contrast to primary generalized epilepsy which is usually idiopathic⁽¹²⁾. In addition to that, positive family history in patients with partial epilepsy observed more in temporal lobe epilepsy worldwide, In this study we have only 3 (6%) patients who have temporal lobe epilepsy, two have positive family history of partial epilepsy and one has no family history of partial seizures⁽¹³⁾. In the majority of our patients seizure attacks took about 1-2 minutes (54%), whereas in (32%) the attacks lasted 2-5 minutes while (14%) have an attack lasted more than 5 minutes. This goes with what was mentioned in the literature^(14,15). We were surprised that; none of our patients had status epilepticus. This could be due to relatively small sample size and lack of long standing follow up in this study. Prodromal symptoms (aura) were reported in (32%). Among these symptoms, gustatory or abdominal aura like epigastric pain and epigastric sensation, nausea and vomiting were predominate and were found in (12%). Autonomic symptoms (Sweating & palpitation) reported in (8%), fear detected in (6%), anxiety and visual hallucination detected in (4%), olfactory hallucination, auditory hallucination and automatism each was reported in just (2%). The percentage figures were less than what had been mentioned in the literature⁽¹⁶⁻¹⁸⁾. Patients and co patient's cooperation and intelligence play a great role in deciding on the percentage findings of the above mentioned symptomatology. The commonest post ictal symptoms were confusion, which was encountered in (16%). Sleep and Todd's paralysis each was found in (8%) whereas headache and

amnesia were reported in (6%) and (4%) respectively. These figures relatively go with the literature⁽¹⁹⁾. As these symptoms are common only with complex partial epilepsy, which was detected in only in (24%) of our patients. Abnormal neurological signs were found in (30%). These signs include right or left sided weakness (22%), facial palsy (12%), optic atrophy (4%), papilloedema (2%) and hearing impairment (4%). Other neurological signs that can be detected in patients with epilepsy include skin manifestations like, café au-lait, axillary flickering in case of neurofibromatosis, hypopigmented patches, shagreen patches and adenoma sebaceus in case of tuberous sclerosis, port-wine spot in Sturge Weber syndrome⁽²⁰⁾. It is unusual for patients who have partial epilepsy to have this low ratio of neurological signs, but this can be accepted here because in many of our patients the causes were not detected concerning conventional MRI might have failed to detect small lesions like mesial temporal sclerosis. The study, however, revealed that, risk factors of partial epilepsy were detected in (46%). space occupying lesions (24%) and cerebrovascular accidents (22%) are the commonest risk factors of partial seizures. These figures do not differ much from what had been reported in the literature^(21,22). In a study done in England, risk factors of partial epilepsy were detected in (41%)⁽²³⁾. Simple partial epilepsy was found in (52%), followed by complex partial epilepsy, which was found in (24%) and secondary generalized epilepsy which was also encountered in (24%). This is differed from what had been reported in the literature which showed that complex partial epilepsy is the commonest type of partial seizures⁽²⁴⁾. More studies are needed to explain this difference. Interictal EEG discharges were demonstrated in (56%), correlate fairly with recent retrospective studies, but it is so much than a study done in England (39%)⁽²⁵⁾. Focal

epileptiform discharge was reported in (42%), of these, (6%) have temporal lobe seizures, (6%) have parietal lobe seizures, (4%) have frontal lobe seizures, (2%) has occipital lobe seizures, (4%) have temporoparietal seizures, whereas in (18%) seizures not localized to certain area. Focal discharge with secondary generalization detected in (10%), whereas (4%) showed generalized discharge. This goes with what was mentioned in the literature⁽²⁶⁾. Since the diagnosis of epilepsy is mainly clinically the above mentioned percentage classification of seizure types are by no means fully representative of all referred epileptic patients. It only showed seizure subtypes in patients with positive EEG. There was no real difference in gender distribution of abnormal interictal EEG. The lower number of females (12%) compared to males (16%) may be due to delay of females to seek medical advice. Sleep deprivation EEG recording within 48 hours of a seizure and seizure frequency of at least one attack per month are all known to increase the chance of finding epileptic discharges⁽²⁷⁾. The inability to have EEG recording within the first 48 hours was due to practical difficulties as quite number of patients were referred from distant Sudan states and districts. In the future we think it is wise to do a second recording (during sleep) for every patient with a negative EEG. This hopefully will increase the chance of obtaining more positive EEGs. Our study, however, showed that MRI detected abnormal findings in (46%). The incidence of abnormal MRI findings in this study correlates fairly with what had been mentioned in the literature⁽⁵⁾. In a study done in Germany, MRI failed to detect 57% of epileptiform lesions. Brain MRI or CT scan are indicated for patients with partial epilepsy, late onset epilepsy, epilepsy with abnormal neurological signs and epilepsy not responding to treatment⁽²⁸⁾. For those who have complex partial epilepsy, carbamazepine is the drug

of choice, in addition to sodium valproate. While phenytoin, phenobarbitone and lamotrigine are the second line. Carbamazepine and sodium valproate are the drug of choice in secondary generalized epilepsy and simple partial epilepsy.

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