

## PARTIAL SEIZURES IN CHILDREN

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### ABSTRACT

Seizure disorders are the most prevalent serious neurological disease. Partial seizures are the most common form of seizures in children. This prospective study was carried out to determine the etiology and intracranial lesions in children with partial seizures. During the period of 3 years, 172 children with partial seizures (>2 attacks) were included in the study. All children had contrast CT scan of head. About 70% of children had their first episode of seizure before 6 years of age. The most common type of seizures was complex partial and the most common lesion on CT scan head was ring enhancing lesion (56.07%). For diagnosis of partial seizures detail history and CT Scan of Head are essential.

**Key Words:** *Partial seizures, neurocysticercosis, Tuberculoma, CT scan.*

### INTRODUCTION

Epilepsy is defined as a randomly recurring symptom complex resulting from an episodic disturbance of CNS function, associated with an excessive, self limited, neuronal discharge. Variation in clinical manifestations result from variation in the portion of the brain involved. The incidence of epilepsy has been reported to range from 0.8% – 1.1%<sup>1</sup> and approximately 50% of all cases of epilepsy start in childhood. As per international league against epilepsy (ILAE 1989) all epilepsy cases are classified into two categories e.g. partial seizures and generalized seizures.<sup>2</sup>

### OBJECTIVE

The aetiological factors of epilepsy differ markedly in children as compared to adults. This study was carried out for determining the underlying etiology on CT scan Head.

### MATERIAL AND METHOD

The study was conducted prospectively over a three year period

between Jan 2000-Dec. 2002 in the department of pediatrics, Nepalgunj Medical College, Nepalgunj, Nepal. 172 children with partial seizures defined as per I LAE. All these children had two or more than two attacks of unprovoked partial seizures. Children with neonatal convulsions, febrile convulsions and acute CNS infections were excluded. All the children were subjected to CT Scan of Head.

### RESULT

Of the 172 children with partial seizures, 112 (65.11%) were male and 60 (34.88%) were females. The age of patients ranged between 6 months and 12 years. 69.8% of children (120/172) had their first episode of seizure before the age of six years. The seizures type were as follows:

(a) Simple Partial	38 (22.09%)
(b) Complex Partial	95 (55.23%)
(c) Partial Seizures with Secondary generalization	39 (22.67%)

The aetiological profile on CT Scan Head of partial seizures in these children is shown in table I.

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Lesions	Number	%
Normal	65	37.79%
Symptomatic	107	62.20%
? Ring enhancing		
1. Single	54	50.46%
2. Multiple	06	5.60%
? Cortical infarct	12	11.21%
? Cerebral atrophy	10	9.34%
? Dilated Ventricles	06	5.60%
? Encephalomalacia	06	5.60%
? Calcifications	04	3.73%
? Brain tumor	02	1.86%
? Gliosis	03	2.80%
? Porencephalic cyst	02	1.86%
? Subdural effusion	02	1.86%

Intracranial lesions were detected in 107 out of 172 children and the most commonly observed lesions on CT Scan of head were ring enhancing lesions which were multiple in 06 children and single in 54 children. Of these 60 patients 22 were diagnosed as tuberculoma using radiological criteria and supportive evidence of tuberculosis elsewhere and remaining 35 were treated as neurocytotoxicosis. Immunological tests for NCC and follow up CT scan were not done due to economic constraints.

## DISCUSSION

Partial seizures in children represent a large percentage of epilepsy requiring an accurate diagnosis for appropriate management. A study of a cohort of 440 children observed partial seizures constitute a large percent (41.7%) of seizure types in children.<sup>3</sup> In developing countries like Nepal partial epilepsy is reported to be more frequent in all age groups.<sup>4</sup>

Analysis from clinical data and investigations revealed that ring enhancing lesions as neurocytotoxicosis were the commonest lesion. This has also been observed by other studies<sup>5</sup> CT studies of partial seizures in children are very helpful in detecting small intracranial lesions and are reported to have a higher yield than those observed with generalized epilepsy.<sup>6</sup> Abnormal scans have identified in 60-70% children with partial seizures.<sup>7</sup> The findings of the present study are similar to other studies so far as the basic patterns of intracranial structural lesions are concerned.<sup>8,10</sup>

Thus partial seizures is the most common neurological disease of childhood, which causes great impact on the social as well as economic aspect of the under developed countries. Numerous relatively benign, episodic spells often are misdiagnosed and even treated as seizures. Therefore correct diagnosis and appropriate treatment should be more important.

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