GELASTIC EPILEPSY - A CASE REPORT

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ABSTRACT

Gelastic epilepsy is an uncommon phenomenon and it is particularly uncommon in adults. This paper describes a case of gelastic epilepsy in a middle-aged woman presented in a psychiatric hospital. A short history of the condition, clinical and electroencephalographic findings in gelastic epilepsy and causes of pathological laughter are discussed.

Keywords: Gelastic, epilepsy

SINGAPORE MED J 1990; NO 31: 78-79

INTRODUCTION

Trousseau and Fere (1) are usually cited as being among the first to report on epileptic laughter. It was Daly and Mulder in 1957 (2) who coined the term 'gelastic epilepsy' to describe this condition. The term gelastic comes from the Greek word 'gelas' meaning 'joy' (3). Gelastic epilepsy refers to inappropriate or pathological laughter occurring in association with other features of an epileptic fit.

CASE REPORT

LBC is a 45-year old Chinese housewife who is married with 3 children. She presented with a one-year history of episodes of fearfulness and anxiety. These were initially followed by 'fainting' spells which lasted 2-3 minutes and occurred several times each day. She was investigated in a medical unit where an electroencephalogram, computerised axial tomogram and blood investigations revealed no abnormality. These 'fainting' spells subsided spontaneously but she began to experience episodes of laughter which she was unable to recall and which were sometimes preceeded by fear and anxiety. There were no precipitating factors and in between these episodes, she was normal. Her family brought her in for treatment because these episodes were becoming more frequent and she was distressed by her symptoms. Her premorbid adjustment was good and she had no anxiety traits. There was no past history of any head injury.

Mental state examination revealed an anxious and depressed looking middle-aged Chinese woman who, during the interview, would break into laughter for no apparent reason. She was however amnesic for these episodes. She was depressed because of her symptoms and although she had threatened suicide, she did not make any suicidal attempts. She did not admit to psychotic symptoms and insight was present.

Physical examination revealed no abnormalities other than an extensive hemangioma of her left upper limb. Neurological examination including fundoscopy were normal.

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An organic etiology was suspected because of the following reasons:

1. The presence of anxiety state in a middle-aged person with no premorbid anxiety traits;
2. The presence of fainting spells;
3. The presence of episodes of laughter which she had amnesia for.

An electroencephalogram was done and it revealed right anterior temporal epileptic activity.

A computerised axial tomogram was done and it revealed no abnormalities.

She was treated with carbamazepine and improved.

DISCUSSION

Excessive laughter may occur in the following circumstances (3, 4):

1. The emotion may be excessive eg. frontal lobe lesions.
2. There may be impairment of a controlling mechanism so that laughing once excited, becomes excessive and continuous even after the patient desires it to stop, eg. when there is dysfunction of both pyramidal tracts eg. pseudobulbar palsy, generalised cerebral arteriosclerosis, amyotrophic lateral sclerosis.
3. Irregular discharges of epilepsy - in such instances, the laughing occurs without any recognizable exciting cause and patients are usually unaware of it and have no recollection of it afterwards. LBC had amnesia for the episodes of laughter that she experienced and falls into this category.
4. Psychiatric illness eg. Schizophrenia, hysteria.

Gelastic epilepsy is uncommon. In a series of 5000 consecutive cases of epilepsy studied in an epileptic centre over a 12-year period (1), approximately 0.16% had gelastic epilepsy. In the majority of cases, the age of onset of the seizures was in the paediatric age group.

The term gelastic epilepsy is also used to describe inappropriate or pathological episodes of crying that occur in association with other features of an epileptic fit. This has been referred to as 'dacrystic' (Greek : "dakryon" meaning "tear") epilepsy or as 'quiritarian' epilepsy (6).

Although gelastic epilepsy is a neurological condition, it may present to the psychiatrist because of symptoms like depression, fear, anxiety and laughing spells (as in this case) and it is important that the psychiatrist be able to recognize the condition.

In gelastic epilepsy, the laughter may occur at any time during the convulsion viz :

1. During the aura;
2. During the fit itself;
3. Post-ictal.

In LBC, the anxiety and fear she experienced prior to the episodes of laughter probably represent mood changes during the aura while the laughter represents the fit proper.

Gelastic epilepsy is often accompanied by hypotonia (7) and the 'fainting' spells she experienced may represent this. The degree of consciousness, awareness of the attack and the memory of the attack vary in different cases (7).

It is important to look for an underlying organic basis in cases of gelastic epilepsy. Gelastic epilepsy may arise from lesions of the frontal lobe, temporal lobe (6) or subcortical structures like the hypothalamus (8). Druckman and Chao (9) published eleven cases, all of them in children, who had brain injury near the hypothalamus.

Although electroencephalographic abnormalities are predominantly temporal lobe in location (1), there is no single anatomic lesion that can be held responsible for the occurrence of gelastic epilepsy. This is probably because many lesions can cause the same effect through a common centre or centres to cause laughing epilepsy (1). Electroencephalograhic examinations during ictal laughing have not revealed a characteristic pattern of electrical activity (7, 8). In a study of 91 patients with gelastic epilepsy, foci were more commonly left-sided (10). In LBC, the epileptic focus was right-sided.

It is interesting to note that the first electroencephalogram done while LBC was in the medical unit was normal. It is known that a negative electroencephalogram does not exclude epilepsy and if clinical features point towards the diagnosis, electroencephalography ought to be repeated, and if necessary, using provocative techniques.

In LBC, although computerised axial tomography revealed no abnormalities, the extensive hemangioma over her left upper limb suggests the possibility of a vascular intracranial lesion. Perhaps more sophisticated tests like positron emission tomography would reveal such a lesion. Martin in 1950 (4) described 4 cases in whom vascular disturbances eg. aneurysmal haemorrhage were observed.

Management depends essentially on the etiology. If a tumour is identified, it can be removed. However, in most cases, specific therapy is non-existent and treatment essentially employs anti-convulsants, particularly those employed in the treatment of temporal lobe epilepsy.

ACKNOWLEDGEMENT

I would like to thank Professor Teo Seng Hock, Medical Director of Woodbridge Hospital, for reading through the original manuscript and for his helpful comments.

REFERENCES

1. Chen RC, Forster FM: Cursive epilepsy and gelastic epilepsy. J Neurol 1973;23:1019-29.
2. Daly DD, Mulder DW: Gelastic epilepsy. Neurology 1957;7:189-92.
3. Black DW: Pathological Laughter - A review of the literature. Nerv Mental Dis 1982;170:67-70.
4. Martin JP: Fits of laughter in organic cerebral disease. Brain 1950;73:453-64.
5. Offen ML, Davidoff RA, Troost BT, Richey ET: Dacrystic Epilepsy. Neurol, Neurosurg Psychiatr 1976;39:829-34.
6. Sethi PK, Rao TS: Gelastic, quiritarian & cursive epilepsy. A clinicopathological appraisal. Neurol, Neurosurg Psychiatr 1976;39:823-8.
7. Lehtinen L, Kivalo A: Laughter epilepsy. Acta Neurol Scand 1965;41:255-61.
8. Grumpet J, Hansotia P, Upton A: Gelastic Epilepsy. J Neurol, Neurosurg Psychiatr 1970;33:479-83.
9. Druckman R, Chao D: Laughter in Epilepsy. Neurology 1957;7:26-36.
10. Sackeim HA, Greenberg M, Weiman AL, et al: Hemispheric Asymmetry in the Expression of Positive and Negative Emotions. Arch Neurol 1982;39:210-8.