

GELASTIC EPILEPSY

Introduction

Gelastic seizures are the term used to describe *focal or partial seizures with bouts of uncontrolled laughing or giggling*. They are often called laughing seizures. The person may look like they are smiling or smirking.

- The emotions (laughing or crying) are often forced and the person can't stop them from happening.
- Most people don't feel happy or a sense of well-being during a gelastic seizure. The opposite may happen - they may feel scared or a loss of control. Some people may feel anxious that they will laugh at a socially inappropriate time.
- Usually a person is aware of what's going on around them during these seizures.
- These seizures begin in infancy in 1 out of 3 children. The average age when gelastic seizures start is around 10 months.

Gelastic seizures often happen as a child is falling asleep, but they can occur at any time.

Infants and children will be awakened from sleep by a gelastic seizure, then settle down and go right back to sleep.

Dacrystic seizures are focal or partial seizures when a person makes a crying sound (unlike uncontrolled laughing this epilepsy is characterized by uncontrolled crying).

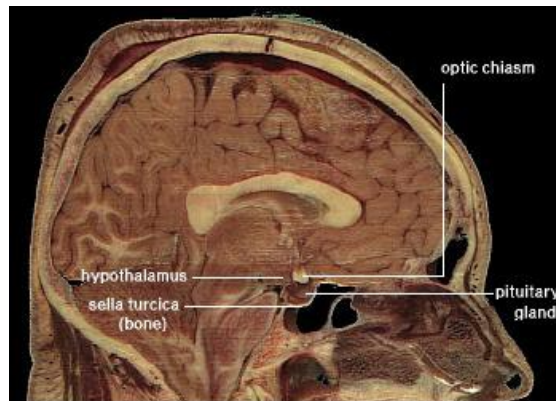
Site of origin

These focal or partial seizures come from the area of the brain called the hypothalamus.

This is found at the base of the brain.

- The gelastic or dacrystic seizures are usually seen in people with a lesion or area on the hypothalamus called a hamartoma.

- The term hypothalamic hamartoma or HH is used to describe this.
- Seizures associated with HH usually start as focal seizures. Other seizure types may be seen as the person gets older.
- Gelastic and dacrystic seizures may spread to affect both sides of the brain, resulting in absence, atonic, tonic (also called drop attacks), and tonic-clonic seizures.



Seizure semiology

Gelastic seizures are often short, lasting 10 to 20 seconds or less. They may look different with each child, yet there are some common features, such as:

- They often start with an aura. The person may look startled or even have a look of panic or fear.
- There can also be an unpleasant feeling in the stomach (like butterflies), a tickling in the chest or headache. Automatic behaviours, such as lip smacking or swallowing may be seen.
- The person may stare. Their eyes may seem vacant, dilate, and move up and to one side.
- Grunting
- Lip smacking

- Mumbling
- Fidgeting
- There often is a slight smile that seems a bit forced and laughter or grunting that seems unusual or not appropriate at that time. In infants, there may be grunting and unusual squirming as well.
- Some children look for comfort from a parent or favourite toy for no apparent reason. Others may run to a place where they feel safe.

Triggers

- Parents report that their child's gelastic seizures appear triggered by loud noises or fearful responses to sudden actions.
- These seizures can occur many times a day. In some cases, as many as 100 a day have been seen.

Investigations

Diagnosing these seizures can be hard since symptoms are usually missed or not considered seizures at first.

Often, once parents hear a description of a gelastic seizure, they realize they had been happening for a while.

- Often the diagnosis is not made until a different type or more visible seizure happens. Three out of 4 people with HH and epilepsy will develop other types of seizures over time, including different types of generalized seizures.
- Diagnosis can be difficult too because EEG tests (electroencephalogram) are often normal or show minor changes or abnormal findings in children with only gelastic seizures.

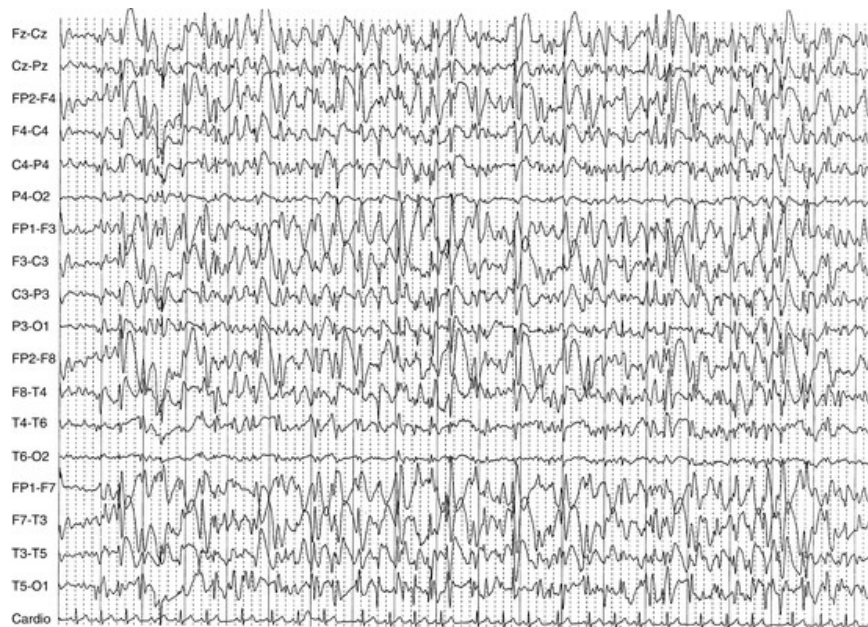
- This is because the brain tissue where the seizures come from (the hamartoma) is deep in the brain. EEG changes are hard to pick up from this area, especially during a routine EEG when a person is not having a seizure.

Magnetic resonance imaging (MRI) and computed tomography (CT) scans may be used to look at the cause (tumors and the location within the brain).

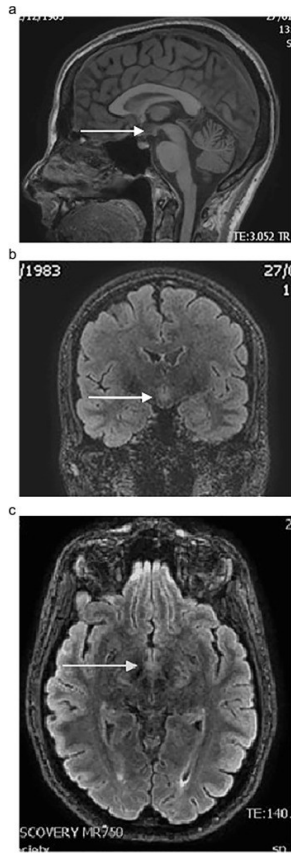
An important issue to remember is these lesions usually don't enhance with contrast.

SPECT or PET -CT scan may be helpful at times to localise the lesion.

EEG in Gelastic epilepsy



MRI in certain HH related Gelastic seizures.



Complications

Left untreated, the laughing seizures caused by HH *can cause long-term behavioural and cognitive damage.*

About 5000 studies were reviewed and found out that too much laughter can cause:

- Fainting
- Asthma attacks
- Protrusion of abdominal hernias
- Headaches
- Incontinence
- Jaw dislocation
- Cardiac arrhythmia

- Laughing swaps, the cortisol in our bloodstream with highly sought after chemicals in the brain: dopamine, *oxytocin* and endorphins. Oxytocin is considered the “empathy hormone” and the “bonding chemical,” and when it enters the bloodstream it creates feelings of relatedness.

Differential diagnosis

Pseudobulbar affect (PBA) is a condition that's characterized by episodes of sudden uncontrollable and inappropriate laughing or crying.

Pseudobulbar affect typically occurs in people with certain neurological conditions like strokes, MND etc or injuries, which might affect the way the brain controls emotion, but the age group is higher (middle age/ elderly).

Treatment

There is no definite treatment for the laughing.

However, some behavioural or learning problems associated with this disorder *may not* be resolved through treatment.

Associated other seizures can be treated one of the several of these drugs -

- Carbamazepine
- Clobazam
- Lamotrigine
- Lacosamide
- Levetiracetam
- Oxcarbazepine
- Topiramate

If the seizure is caused by tumours, surgical intervention may help to correct these issues.

In some cases, radiation therapy or Laser therapy may be used to shrink the tumour.

Summary

Very likely gelastic seizures were already recognized at the time of Babylonian medicine.

A detailed description was given by the Scottish physician Robert Whytt in 1765, and the term "gelastic seizure" was coined in 1898 by the French neurologist and epileptologist Charles Féré.

God has given us laughter, and God himself wants everyone to laugh in life with all living in happiness.

The word "smile" is not used in the New Testament, however, the word "rejoice" is used many times. So, it is logical to conclude that Jesus himself too did smile and laugh. He also had a sense of humour, calling James and John, the "Sons of thunder."

But the fact is, at times even in laughter the heart may ache, and rejoicing may end in grief. This in itself explains the fact that we should remember this peculiar sort of disease and identify it to treat as far possible early in life to prevent complications.



Smiling Jesus



Gelastic smile