A gelastic seizure, also known as “gelastic epilepsy” is a rare type of seizure that involves a sudden burst of energy, usually in the form of laughing or crying.

This syndrome usually occurs for no obvious reason and is uncontrollable. It is slightly more common in males than females. The term Gelastic originates from the Greek word “Gelos” which means laughter. This syndrome can go for very long periods of time without a diagnosis, as it may appear to be much like normal laughing or crying, if it occurs infrequently. It has been associated with several different conditions such as temporal and frontal lobe lesions, tumors, atrophy, tuberous sclerosis, hemangiomas, and post infectious foci, but mainly hypothalamic hamartomas.

Gelastic seizures usually do not respond to antiepilepsy drugs (AEDs). Exceptions to this appear to be rare. Additionally, while the other seizure types that occur later in childhood may be helped with AED therapy, it is unlikely that these seizures will be completely controlled (“treatment-resistant”). Consequently, other treatment interventions are usually required.

A laugh-induced seizure is an unrecognized condition and to the best of our knowledge no case has been reported in the medical literature until now. We present an interesting and extremely rare case in which laughing generated the seizure activity that was recorded and confirmed by video electroencephalography. CASE PRESENTATION:

A 43-year-old obese Caucasian man with history of bipolar disorder and chronic headache presented with multiple episodes of seizures, all induced by laughter while watching comedy shows. Each episode lasted approximately five seconds. In each instance, he started laughing, then his arms started shaking and he felt like 'his consciousness was being vacuumed away'. A physical examination revealed normal findings. He had been maintained on valproic acid for bipolar disorder and topiramate for his chronic headache, but this did not control his symptoms. His sleep-deprived electroencephalography and brain magnetic resonance imaging were normal except for an arachnoid cyst measuring 4.2 × 2.1cm in the anterior right middle cranial fossa. His video electroencephalography demonstrated laugh-induced seizure activities. He was then placed on carbamazepine. Following treatment, he had two episodes of mild staring but no frank seizures, and his seizures have remained well controlled on this regimen for more than a year. CONCLUSIONS:

Laugh-induced seizure is a most unusual clinical entity without any previous case report. Confirmatory diagnosis can be made by video electroencephalography recording of seizure activities provoked by laughing. As in gelastic seizure without hypothalamic hamartoma, our case responded well to polytherapy with topiramate and carbamazepine on top of laugh-provocation avoidance. Further study is required to establish the standard treatment of this condition [1)].

1)
Mainali NR, Jalota L, Aryal MR, Schmidt TR, Badal M, Alweis R. Laugh-induced seizure: a case report. J Med Case Rep. 2013 May 13;7:123. doi: 10.1186/1752-1947-7-123. PubMed PMID: 23668718; PubMed Central PMCID: PMC3657544.