# Experts warn rare brain condition linked to Covid-19 caused death of eight-year-old girl



Experts are sounding the alarm regarding a rare but deadly neurological side effect of COVID-19, evidenced by the tragic case of an eight-year-old girl who lost her life after the virus spread to her brain. This case, reported by medical professionals at the Guangzhou Women and Children's Medical Centre, underscores the urgent need for heightened awareness of how COVID-19 can manifest atypically in children.

Initially, the young girl exhibited symptoms commonly mistaken for a routine virus: a fever exceeding 38°C, a rash, and vomiting. Critically, medical staff did not conduct a COVID-19 test, as her signs lacked an "identifiable trigger." Unfortunately, within days, the girl began suffering severe seizures that left her "frothing at the mouth" and incapacitated. It wasn’t until her condition deteriorated dramatically that she was moved to a specialist facility, where she was subsequently intubated to assist with her breathing.

Testing revealed that she had developed acute necrotising encephalopathy (ANE), a rare condition often provoked by viral infections, where the immune system reacts overzealously to pathogens like COVID-19 or influenza. While there are only a few hundred documented cases of ANE in medical literature, the severe impact it has on the brain is significant. The body’s inflammatory response leads to extensive tissue damage, swelling, and the potential for bacterial toxins to enter the brain, resulting in cell death.

Medical reports from the facility indicate that despite aggressive treatment efforts—including antibiotics to address a potential infection and corticosteroids to manage inflammation—the girl's condition did not improve, and she was ultimately declared brain dead after nine days of hospital care.

This incident aligns with a broader pattern observed in children infected with COVID-19. A multinational study pointed out that children who contract the virus can exhibit neurological symptoms, including brain lesions and multi-system inflammatory responses, diverging from the more common respiratory presentations seen in adults. In fact, a significant proportion of children diagnosed with multisystem inflammatory syndrome reported brain abnormalities, demanding urgent medical attention.

Moreover, studies have shown that children with COVID-related neurological complications often experience rapid deterioration compared to adults, highlighting the need for prompt diagnosis and treatment. One retrospective analysis illuminated that systemic inflammation, rather than direct viral invasion of the brain, might be at the core of the neural damage observed in pediatric cases.

The recognition of conditions such as ANE as a potential sequel of COVID-19 is a stark reminder of the nuances of the virus, particularly its unpredictable impacts on children. This case not only illustrates the importance of identifying atypical symptoms early but also stresses the necessity for increased clinical vigilance among healthcare providers. The clinicians involved in this tragic case assert that early recognition and intervention might significantly influence outcomes for young patients experiencing severe neurological effects.

As countries like the UK gradually move past pandemic-driven restrictions, public health measures are transitioning away from intensive tracking of COVID-19's prevalence. However, this case serves as a sobering reminder that COVID-19 remains a significant health threat, especially for vulnerable populations such as children. Continued education and awareness are essential in combating the lingering challenges posed by the virus as society adjusts to a new normal.

### Reference Map

* Paragraph 1: [[1]](https://www.dailymail.co.uk/health/article-14730347/Warning-girl-death-Covid-virus-frothed-mouth-brain-seizure.html?ns_mchannel=rss&ns_campaign=1490&ito=1490)
* Paragraph 2: [[1]](https://www.dailymail.co.uk/health/article-14730347/Warning-girl-death-Covid-virus-frothed-mouth-brain-seizure.html?ns_mchannel=rss&ns_campaign=1490&ito=1490)
* Paragraph 3: [[1]](https://www.dailymail.co.uk/health/article-14730347/Warning-girl-death-Covid-virus-frothed-mouth-brain-seizure.html?ns_mchannel=rss&ns_campaign=1490&ito=1490)
* Paragraph 4: [[1]](https://www.dailymail.co.uk/health/article-14730347/Warning-girl-death-Covid-virus-frothed-mouth-brain-seizure.html?ns_mchannel=rss&ns_campaign=1490&ito=1490), [[2]](https://pubmed.ncbi.nlm.nih.gov/36529001/)
* Paragraph 5: [[3]](https://www.thelancet.com/article/S2352-4642%2820%2930362-X/fulltext), [[4]](https://pmc.ncbi.nlm.nih.gov/articles/PMC10433176/)
* Paragraph 6: [[5]](https://www.neurology.org/doi/full/10.1212/NXI.0000000000200186)
* Paragraph 7: [[6]](https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-025-05436-8)
* Paragraph 8: [[7]](https://pmc.ncbi.nlm.nih.gov/articles/PMC10838156/)

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## Bibliography

1. <https://www.dailymail.co.uk/health/article-14730347/Warning-girl-death-Covid-virus-frothed-mouth-brain-seizure.html?ns_mchannel=rss&ns_campaign=1490&ito=1490> - Please view link - unable to able to access data
2. <https://pubmed.ncbi.nlm.nih.gov/36529001/> - This study presents a case of an 11-year-old boy who developed acute necrotizing encephalopathy (ANE) following a SARS-CoV-2 infection. The patient exhibited symptoms such as ophthalmoplegia, ataxia, and aphasia. Neuroimaging revealed significant swelling and signal changes in bilateral thalami, brainstem, and cerebellar hemispheres, consistent with ANE. Early treatment with steroids, intravenous immunoglobulin, and interleukin-6 blockade led to good neurological improvements. The study highlights the importance of early immunotherapy in managing severe ANE cases associated with COVID-19 in children.
3. <https://www.thelancet.com/article/S2352-4642%2820%2930362-X/fulltext> - This multinational, multicenter study investigated neuroimaging manifestations in children with SARS-CoV-2 infection. Among 11 children with Multisystem Inflammatory Syndrome in Children (MIS-C), the most frequent brain abnormalities were lesions in the splenium of the corpus callosum, observed in seven (64%) of the cases. These lesions appeared as discrete, ovoid, T2 hyperintense foci, sometimes extending into the adjacent white matter. The study suggests that these lesions may represent intramyelinic edema resulting from cytokine-mediated glutamate release, emphasizing the need for awareness of such findings in pediatric COVID-19 cases.
4. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10433176/> - This retrospective study analyzed 12 pediatric cases of acute necrotizing encephalopathy (ANE) associated with COVID-19. The findings suggest that SARS-CoV-2 does not directly infect or attack the brain parenchyma. Instead, the study proposes that ANE in these cases may result from systemic inflammation, potentially exacerbated by hypoxia or ischemia. The research highlights the complex mechanisms underlying ANE in children with COVID-19 and underscores the need for further studies to elucidate these pathways.
5. <https://www.neurology.org/doi/full/10.1212/NXI.0000000000200186> - This article defines the clinicoradiologic syndrome of SARS-CoV-2-associated acute necrotizing encephalopathy (ANE). It compares clinical and imaging findings between children and adults with ANE related to COVID-19. The study found that children often experienced earlier neurological deterioration and were more likely to have elevated liver enzymes compared to adults. Imaging revealed lesions in the putamina, external capsules, insula cortex, or medial temporal lobes in both groups. The article emphasizes the importance of recognizing this syndrome for timely diagnosis and management.
6. <https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-025-05436-8> - This study reports cases of severe central nervous system injury in nine children infected with COVID-19. All patients exhibited varying degrees of coma, with three diagnosed with necrotizing encephalopathy. The research found that most children had abnormal liver, heart, coagulation, and hematopoietic function, indicating multiorgan failure. The study highlights the rapid progression and poor prognosis of severe neurological complications in pediatric COVID-19 cases, emphasizing the need for prompt monitoring and treatment.
7. <https://pmc.ncbi.nlm.nih.gov/articles/PMC10838156/> - This case report describes a seven-year-old girl who developed severe acute necrotizing encephalopathy (ANE) following a COVID-19 infection. The patient experienced altered consciousness and vomiting after a prolonged fever. Neuroimaging revealed symmetric high-intensity signals in the bilateral thalamus, consistent with ANE. Early immunomodulatory therapy and therapeutic plasma exchange led to a favorable outcome, with the patient discharged without neurological sequelae. The report underscores the importance of early intervention in managing severe ANE cases associated with COVID-19 in children.