

Abstract

Brainstem encephalitis is rare and this study aims to report the clinical course, imaging features, and therapeutic response of hiccup patient with gastric ulcer who developed brainstem encephalitis with Epstein–Barr virus (EBV) detected in cerebrospinal fluid and then subsequently followed by development of duodenal perforation. Data of a gastric ulcer patient who suffered from hiccups, with brainstem encephalitis detected and then subsequently suffered from duodenal perforation were collected retrospectively and analyzed. A literature search was conducted on Epstein–Barr virus associated encephalitis using keywords like "Epstein–Barr virus encephalitis" and "brainstem encephalitis," "hiccup." The etiology of EBV-related brainstem encephalitis in this case report is not clear. However, from the initial hiccup to the presentation of both brainstem encephalitis and duodenal perforation during the course of hospitalizations builds up an uncommon case.

Background

Brainstem encephalitis (BE) is rare, the etiology and causes of encephalitis are often difficult to identify.¹ In a study to investigate the etiology of brainstem encephalitis, the etiology determined in 58 of 81 cases, are possibly related to inflammatory or autoimmune reasons, where corticosteroid were mainly given as a treatment and less frequently administered in the rest 23 cases as no confirmed diagnoses were given.² Epstein–Barr virus (EBV) infects 90% of the world human population and most infections are asymptomatic, carried lifelong and are unaware of. Infection symptoms can include fever, sore throat, lymphadenopathy, and splenomegaly.³ Young children are affected mainly by primary EBV infection due to oral secretions as they might exchange toys and bottles.⁴ EBV associated encephalitis c⁻⁻⁻⁻

2023/12/7 Case report and literature review: A hiccup patient developed encephalitis and duodenal perforation - Fanfeng Kong, Xiao Xue Zeng, 2023 uuouerial perioration whereas the antacto medication uoses for the stornacti was not enough.

Conclusions

There are a general lack of awareness, knowledge, or training in treating such cases among physicians due to the rarity of EBV related encephalitis. The patient himself in this case didn't realize the seriousness of his symptoms either until he experienced syncope and dyspnea. The current clinical system in this case study lack the tool, methods, or capacity to predict or prevent the possible worsening progression of the condition, the pneumonia, encephalitis, and subsequently the duodenal perforation, and it was only able to observe the result. The co-presentation of both brainstem encephalitis and duodenal perforation during the patient's course of hospitalization build up a rare case. However, the activeness of both Helicobactor pylori and EBV led to the deterioration of patient health condition. The contribution in sharing this case study could be that it may provide data for future preventative medicine data pool by computational modeling^{25,26} to predict the advancement

of diseases before they progress, serving as a tool that health providers could utilize to prevent a deteriorating condition. Moreover, it might serve as a tool to train physicians.

Ethics approval and consent to participate

Not applicable

Consent for publication

Written informed consent was obtained from our patient for publication of this case report and any accompanying images in an academic paper.

Declaration of conflicting interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) received no financial support for the research, authorship, and/or puPrivacyhttps://journals.sagepub.com/doi/10.1177/1359653523116148810/20

23. Elion GB, Furman PA, Fyfe JA, et al. Selectivity of action of an antiherpetic agent, 9-(2hydroxyethoxymethyl) guanine. *Proc Natl Acad Sci U S A* 1977 Dec; 74(12): 5716–5720. PMID: 202961; PMCID: PMC431864.

GO TO REFERENCE

<u>Crossref</u>

PubMed

Google Scholar

24. Huang L, Zhang X, Fang X. Case Report: Epstein-Barr Virus Encephalitis Complicated With Brain Stem Hemorrhage in an Immune-Competent Adult. *Front Immunol* 2021 Feb 25; 12: 618830. PMID: 33717113; PMCID: PMC7947888.

GO TO REFERENCE

<u>Crossref</u>

<u>PubMed</u>

Google Scholar

25. Zeng Jie (Bangzhe), self-organizational system structure theory, transgenic animal communication Vol.3, No.8-10,1996.

GO TO REFERENCE

Google Scholar

26. Zeng Jie. (Bangzhe), on the system bioengineering category. *Transgenic Animal Communication* 1994; Vol.1. No.6.

GO TO REFERENCE

Google Scholar