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Case Report

Gayet-Wernicke Encephalopathy: About an Uncommon Case Report

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Keywords

- Gayet-Wernicke encephalopathy, Hyperemesis gravidarum, Angio-MRI

Abstract

Background: Gayet-Wernicke encephalopathy is a rare but serious deficiency encephalopathy caused by a deficiency of thiamine (vitamin B1). It is frequently seen in heavy alcohol users, but can sometimes occur in other circumstances. We hereby report an uncommon case of Gayet-Wernicke encephalopathy complicating vomiting in pregnancy.

Case Presentation: We hereby report an uncommon case of a 32-year-old woman, gravida 1 para 1, admitted to our structure with incoercible gravid vomiting of more than four weeks in a progressive pregnancy of 12 weeks of amenorrhea. The patient was transferred to the intensive care unit and was given rehydration with isotonic saline, potassium recharging via potassium repletion via a central venous line and antiemetic treatment. The evolution was favorable on the hemodynamic and biological patterns but the patient remained disoriented and apathetic with the appearance of nystagmus. An angio-MRI was performed and revealed hyper-signal images in the aqueduct in the aqueduct of Sylvius, in favor of a Gayet-Wernicke encephalopathy. After three days of systemic vitamin therapy for three days, the evolution was spectacular and the patient was discharged home after 7 days.

Conclusions: It is of paramount importance to remind all practitioners that they should always suspect Gayet-Wernicke encephalopathy in the presence of any confusion or oculomotor sign in a pregnant woman with vomiting in pregnancy, and also to underline the importance of prevention by systematically prescribing of vitamin B1 in any pregnant woman with hyperemesis gravidarum.

HIGHLIGHTS

- Gayet-Wernicke encephalopathy is caused by a deficiency of thiamine (Vitamin B1).
- It can sometimes complicate vomiting in pregnancy.
- It should always be suspected in the presence of any confusion or oculomotor sign in a pregnant woman with vomiting in pregnancy.
- Its prevention is based on prescribing of Vitamin B1 in any pregnant woman with hyperemesis gravidarum.

BACKGROUND

First described in 1881 by Carl Wernicke [1], Gayet-Wernicke's encephalopathy is an acute and severe neuropsychiatric syndrome. It is an uncommon disease and its symptoms include the classic triad of ataxia, ophthalmoplegia and confusion [1,2]. It has usually been most frequently mentioned in the context of alcoholism and neurological signs but is now found in a variety of clinical pictures including obstetrics [3]. This encephalopathy remains a clinical diagnosis that can be made even with normal blood thiamine levels and with magnetic resonance imaging (MRI), having a sensitivity of 53% and specificity of 93% [3]. However, it is imperative to diagnose it and start treatment as soon as possible as it influences the prognosis [3]. We hereby report an uncommon of Wernicke's encephalopathy after prolonged malnutrition and vomiting.

CASE PRESENTATION

We hereby report an uncommon case of a 32-year-old woman, gravida 1 para 1, admitted to our structure with incoercible gravid vomiting of more than four weeks in a progressive pregnancy of 12 weeks of amenorrhea. On admission to the emergency department, the patient was obnoxious, dehydrated with hypotension (70/35 mmHg), tachycardia at 129bpm, and SpO_2 at 99% on 3-liter O_2. The patient was transferred to the intensive care unit. Biological workup showed hyponatremia at 127 mEq/l, hypokalemia at 2.53 mEq/l, liver cytolysis with ASAT at 314 U/l and ALAT at 203 U/l, slightly elevated lipasemia at 96U/l, and collapsed TSH under 0.05 µUl/l. Renal function was normal with urea at 0.20 g/l and creatinine at 10 g/l. The hemogram was unremarkable apart from a physiological microcytic hypochromic anemia at 11.9g/l. apart from a physiological anemia. An abdominopelvic ultrasound showed a sludge without lithiasis but

no other abnormalities associated with an evolving intrauterine pregnancy estimated by craniocaudal nodal length at 12 weeks of amenorrhea plus 2 days. The patient was given rehydration with isotonic saline, potassium recharging via a potassium repletion via a central venous line and antiemetic treatment. The evolution was favorable on the hemodynamic and biological patterns but the patient remained disoriented and apathetic with the appearance of nystagmus. An angio-MRI was performed and revealed hyper-signal images in the aqueduct in the aqueduct of Sylvius, in favor of a Gayet-Wernicke encephalopathy. After three days of systemic vitamin therapy for three days, the evolution was spectacular and the patient was discharged home after 7 days.

DISCUSSION

Gayet-Wernicke's encephalopathy is an uncommon acute neuropsychiatric complication due to vitamin B1 (thiamine), deficiency [1]. Thiamine deficiency can be responsible for neurological damage of varying severity, sometimes irreversible [4]. Gayet-Wernicke's encephalopathy is usually observed in chronic alcoholics but occurs mainly in subjects suffering from severe malnutrition [5]. Favoring factors are chronic digestive or neoplastic pathologies, psychiatric pathologies, chronic end-stage renal disease and also vomiting in pregnancy [6]. The diagnosis is initially clinical with the triad of ophthalmoplegia, mental confusion and ataxia [7]. For our patient it was revealed by a persistent confusional state with the appearance of a nystagmus despite the good evolution of hemodynamic and biological patterns.

In the case of suspected Gayet-Wernicke encephalopathy, MRI is the reference examination [8]. It shows hypersignals in T2, FLAIR and diffusion, typical by their location and their symmetrical character around the aqueduct of Sylvius, the 3rd ventricle and especially at the level of the mammary tubercles [8]. In our patient, the non-improvement of her neurological condition led us to request a radiological exploration that is harmless for the fetus which is an MRI angiography in order to eliminate an underlying neurological cause (vascular, tumoral or infectious). This examination thus allowed us to retain the diagnosis of Gayet-Wernicke encephalopathy. The diagnosis of Wernicke's encephalopathy can be confirmed by measuring the blood concentration of thiamine or its derivatives before any supplementation [9]. However, in our patient, no assay was performed due to the therapeutic. Other biological abnormalities were observed in our patient such as hepatic cytolysis, a slight increase in lipasemia and a decrease in TSH. These abnormalities are often observed in this context of gestational vomiting and do not require any specific treatment [10,11].

Gayet-Wernicke encephalopathy is a medical emergency. Treatment should be early, as soon as the diagnosis is suspected, and should not be delayed by vitamin determinations. There is no consensus on the dosage of thiamine or the duration of treatment [12]. Our patient was treated with an intravenous vitamin complex containing vitamins B1, B6 and B12. She received 100mg of thiamine every 8 hours as an infusion for three days followed by oral supplementation with 250mg/d of thiamine.

The prognosis of Gayet-Wernicke encephalopathy is highly variable and depends on the prognosis of Gayet-Wernicke's encephalopathy is highly variable and depends on the early diagnosis and treatment [5]. The mortality rate is 17-20% for all etiologies combined [5]. Prevention is achieved by prescribing vitamin B1 in patients at risk, particularly in cases of incoercible vomiting of pregnancy also known as hyperemesis gravidarum.

CONCLUSIONS

It is of paramount importance to remind all practitioners that they should always suspect Gayet and Wernicke encephalopathy in the presence of any confusion or oculomotor sign in a pregnant woman with vomiting in pregnancy, and also to underline the importance of prevention by systematically prescribing of vitamin B1 in any pregnant woman with hyperemesis gravidarum. This work has been reported in line with the SCARE 2020 criteria [13].

DECLARATIONS

Conflicts of interest

The authors declare that they have no competing interests.

Sources of funding

There are no funding sources to be declared.

Ethical approval

Ethics approval has been obtained to proceed with the current study.

Consent

Written informed consent was obtained from the patient for publication of this case report and any accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

Author contribution

AS: study concept and design, data collection, data analysis and interpretation, writing the paper. YS: study concept, data collection, data analysis, writing the paper. CM: study concept, data collection, data analysis, writing the paper. NZ: study concept, data collection, data analysis, writing the paper. AL: study design, data collection, data interpretation, writing the paper. AST: study concept, data collection, data analysis, writing the paper. AB: study concept, data collection, data analysis, writing the paper. AK: study concept, data collection, data analysis, writing the paper.

GUARANTOR OF SUBMISSION

The corresponding author is the guarantor of submission.

AVAILABILITY OF DATA AND MATERIALS

Supporting material is available if further analysis is needed.

PROVENANCE AND PEER REVIEW

Not commissioned, externally peer-reviewed.

REFERENCES

1. Han JW, Lim S, Shin HS, Park HJ, Jung WJ, Kwon SY, et al. Two cases of Wernicke´s encephalopathy in young age patients receiving allogeneic

hematopoietic stem cell transplantation. Yonsei Med J. 2012; 53: 1049-1053.

2. Davies SB, Joshua FF, Zagami AS. Wernicke´s encephalopathy in a non-alcoholic patient with a normal blood thiamine level. Med J Aust. 2011; 194: 483-484.

3. Segal JB, Bouffard MA, Schlaug G. Characteristic neuroimaging abnormalities of Korsakoff Syndrome. JAMA Neurol. 2016; 73: 1248-1249.

4. Galvin R, Bråthen G, Ivashynka A, Hillbom M, Tanasescu R, Leone MA. EFNS guidelines for diagnosis, therapy and prevention of Wernicke encephalopathy.; EFNS. Eur J Neurol. 2010; 17: 1408-1418.

5. Young GB. Wernicke's Encephalopathy Encyclopedia of the Neurological Sciences. 2014; 753-754.

6. Sechi G, Serra A. Wernicke's encephalopathy: new clinical settings and recent advances in diagnosis and management. Lancet Neurol. 2007; 6: 442-455.

7. Paul AB. Wernicke Encephalopathy. Neuroradiol. 2019; 41-46.

8. Chung SP, Kim SW, Yoo IS, Lim YS, Lee G. Magnetic resonance imaging as a diagnostic adjunct to Wernicke encephalopathy in the ED. Am J Emerg Med. 2003; 21: 497-502.

9. Jane Marshall E, Thomson AD, Guerrini I. Wernicke's Encephalopathy: Role of Thiamine Practical gastroenterology. 2009; 21-30.

10. Goodwin TM, Montoro M, Mestman JH. Transient hyperthyroidism and hyperemesis gravidarum: clinical aspects. Am J Obstet Gynecol. 1992; 167: 648-652.

11. Rotman P, Hassin D, Mouallem M, Barkai G, Farfel Z. Wernicke's encephalopathy in hyperemesis gravidarum: association with abnormal liver function. Isr J Med Sci. 1994; 30: 225-228.

12. Boulanger S, Paquette I, Létourneau G, Richard-Devantoy S. Thiamine et encéphalopathie de Gayet-Wernicke : quelles règles de prescription ? L'Encéphale. 2017; 43: 259-267.

13. Agha RA, Franchi T, Sohrabi C, Mathew G, for the SCARE Group. The SCARE 2020 Guideline: Updating Consensus Surgical CAse REport (SCARE) Guidelines. Int J Surg. 2020; 84: 226-230.