



Case Report

Transient visual impairment in a patient with psychogenic fever: A case report

Aimin Wang, Xiaokai Wang, Ping Wu, Baorui Huang, M.D., Ph.D. *

Department of Emergency, Xiangya Hospital, Central South University, Changsha 410008, Hunan Province, China

ARTICLE INFO

Article history:

Received 2 April 2019

Accepted 5 May 2019

Keywords:

Psychogenic fever

Visual impairment

Psychotherapy

Fever of unknown origin

ABSTRACT

Background: Psychogenic fever is a stress-related psychosomatic disease and has been recognized clinically since the early twentieth century. It is common in adolescents or young women with acute or persistent elevation in body temperature. Psychogenic fever can be attenuated by anxiolytic, neuroleptic, or by psychotherapy.

Case summary: A 22-year-old female was diagnosed with psychogenic fever and suffered from fever, headache and transient visual impairment. She had a history of being hit on the head by a rolling gate 10 days prior to visiting our hospital. All examinations showed no abnormal findings. Antipyretic drugs and antibiotics had no effect on reducing her body temperature. The patient was usually nervous at work and became extremely anxious after the injury. Within a week of psychotherapy, her temperature gradually returned to normal and her sight was restored.

Conclusion: Psychological stress may present with a range of symptoms, including visual impairment. Physicians should consider the diagnosis of psychogenic fever when patients present with fever of unknown origin and no other abnormal findings.

© 2019 Elsevier Inc. All rights reserved.

1. Introduction

Psychogenic fever is a stress-related psychosomatic disease which presents with acute or persistent elevation in body temperature above the normal range. Many clinical cases of “fever of unknown origin” are found to be psychogenic [1]. It is common in patients with anxiety and depression, especially in adolescents or young women [2,3]. This disease has been noted in clinical cases for a long time [4], but the mechanism remains unclear. The diagnosis criteria of psychogenic fever are as follows [5]: (1) axillary temperature above 37.0 °C, (2) no inflammatory signs or other disease that accounts for the fever, and (3) the fever develops during a psychosocially stressful situation. Here, we report an exceptional case of psychogenic fever in a young woman with transient visual impairment. To our knowledge, this phenotype has not been reported previously in patients with psychogenic fever.

2. Case report

The patient was a 22-year-old female who worked as an auxiliary police officer in Hunan province, located in the central southern part of China. On May 31, 2012, she was hit in the head by a rolling gate while working. She was frightened and immediately went to a local hospital for an examination which included brain computed tomography

(CT). The results showed no obvious abnormalities. She later developed a fever the next day, which peaked at 40.6 °C. In addition to the fever, she presented with malaise, headaches, and fatigue. These symptoms prompted her to visit the local hospital again. Clinical laboratory tests showed that her complete blood count, erythrocyte sedimentation rate, and C-reactive protein level were all normal. A lumbar puncture was also performed, and the results revealed no abnormal findings. She was treated with antibiotics for 10 days including ceftriaxone, ciprofloxacin and analgesic, but the temperature did not improve. On June 10, 2012, the patient was admitted to our emergency department for further investigation and treatment.

The patient had a previous medical history of bronchiectasia for 3 years and chronic gastritis for 2 years. She denied any history of tuberculosis, hepatitis or other infectious diseases, and had no family history of hypertension, diabetes, or cancer.

Upon physical examination, her vital signs showed: temperature 40 °C, respiratory rate 14 breaths per minute, blood pressure 95/60 mmHg, and heart rate 85 beats/min. Her tonsils were not enlarged. Auscultation of the lungs and heart revealed no abnormal sounds. There was no abdominal tenderness or rebound pain, and no percussive pain in the liver or kidney area.

Clinical laboratory tests showed that blood cells and urine routine examination, liver and renal function, myocardial enzymes, procalcitonin, C-reactive protein, hemoculture, virus test, rheumatism test, thyroid function and cerebrospinal fluid examination were all within a normal range. Blood lactic acid test was 3.16 mmol/L (normal

* Corresponding author.

E-mail address: bhuang2014@126.com (B. Huang).

range, 0.5–1.7 mmol/L). A chest CT showed bronchiectasia in the left upper lobe. Brain CT showed no abnormal findings. Her abdominal ultrasound was also normal.

After admission, her body temperature fluctuated in the range of 36.5 °C to 40.6 °C (Fig. 1). She was treated with aztreonam, diclofenac sodium, and fluid therapy. But the fever persisted and she began to have blurred vision on June 12th. The next day she complained that she couldn't see at all. As a result, antibiotics were stopped, and an eye test was performed. Visual evoked potential examination showed normal results. Brain magnetic resonance imaging (MRI) was performed on June 13th and no abnormal findings were noted. Since the patient had no evidence of infection and the antibiotic treatment was ineffective, we considered the possibility of psychogenic fever. The constant tension and anxiety of the patient and her family members also supported this diagnosis. Therefore, we invited the psychological department for consultation and communicated with the patient and her family several times over the next week to alleviate their psychological pressure. After a week of psychotherapy, the patient's temperature gradually returned to normal and her sight was restored which confirmed the diagnosis of psychogenic fever. But she did not accept further treatment. The psychogenic fever did not recur during the next two years.

3. Discussion

Psychogenic fever has been recognized clinically since the early twentieth century. But most physicians, pediatricians, and even psychologists whom psychogenic fever patients mostly visit don't realize that stress can cause a fever. Very few articles in China mentioned this disease. As a result, many patients with psychogenic fever are misdiagnosed causing delayed treatment.

The most common causes for fever are infection and cancer. The differential diagnosis of psychogenic fever is very important. In our patient, routine blood examinations, procalcitonin, C-reactive protein, hemoculture, virus test, rheumatism test, and cerebrospinal fluid examination were all within normal ranges. Chest and brain CT showed no sign of infection. She had received antibiotic therapy for over 10 days, but the elevated temperature did not improve. As a result, infection was excluded. Since the patient was young and the examination did not find signs of a tumor, malignant diseases were not considered. The patient worked as an auxiliary police officer and she was usually nervous at work. She and her family became extremely nervous after the injury, fearing for her life. Due to the poor treatment effect, she was anxious and even had transient visual impairment. But after a week of psychotherapy, the patient came to believe that her life was not in danger, and her temperature and sight gradually returned to normal. The

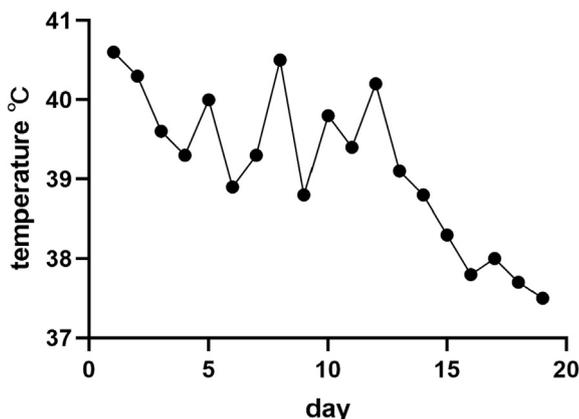


Fig. 1. X-axis shows the days after the injury. Y-axis shows the highest axillary temperature of everyday. The patient's temperature fluctuated between 38.8 °C and 40.6 °C before the psychotherapy. And her temperature gradually returned to normal after a week of psychotherapy.

treatment effect confirmed our diagnosis, supporting that the cause of the fever and transient visual impairment in this case was most likely the fear of death.

The mechanism of psychogenic fever is still unclear. A previous clinical case study showed that psychogenic fever could be attenuated by anxiolytic, neuroleptic, or by psychotherapy [6]. But antipyretic drugs and antibiotics had no effect on reducing body temperature. This suggests a different mechanism from infectious fever and psychogenic fever. Animal studies have found that psychological stress can affect body temperature through increased noradrenaline and β -endorphin, along with activation of the sympathetic nervous system [6]. As far as we know, no experiments have studied the mechanism of vision impairment from psychogenic stress.

Psychological stress may present with a range of symptoms, such as hyperthermia, tachycardia and hypertension. Although many cases of psychogenic fever have been reported, few have resulted in visual impairment. Physicians should consider the diagnosis of psychogenic fever when patients present with fever of unknown origin and no other abnormal findings. It can be treated with anxiolytic, neuroleptic, or psychotherapy. Communication with patients' family members is also very important.

Acknowledgements

The authors thank the patient for permitting to use patient's data. We also thank Fei Li for his help in diagnosing the patients.

Funding

Not available.

Conflict of interest

The authors have no funding and conflicts of interest to disclose.

Ethical approval

Ethical approval for this study was approved by the medical committee of Xiangya Hospital.

Human rights

There are no human rights violations.

References

- [1] Nozu T, Uehara A. The diagnoses and outcomes of patients complaining of fever without any abnormal findings on diagnostic tests. *Intern Med* 2005;44(8):901–2.
- [2] Oka T, Oka K. Age and gender differences of psychogenic fever: a review of the Japanese literature. *Biopsychosoc Med* 2007;1:11.
- [3] Petersdorf RG, Beeson PB. Fever of unexplained origin: report on 100 cases. *Medicine (Baltimore)* 1961;40:1–30.
- [4] Meyer R, Beck D. Psychodynamics of psychogenic fever. *Z Psychosom Med Psychoanal* 1976;22(2):169–76.
- [5] Kaneda Y, Tsuji S, Oka T. Age distribution and gender differences in psychogenic fever patients. *Biopsychosoc Med* 2009;3:6.
- [6] Oka T, Oka K, Hori T. Mechanisms and mediators of psychological stress-induced rise in core temperature. *Psychosom Med* 2001;63(3):476–86.