Fever is one of the symptoms of coronavirus disease 2019 (COVID-19), which is prevalent both in Korea and in other countries throughout the world. Fever is defined as an oral temperature of 37.8°C or higher or a rectal temperature of 38.2°C or higher. There are many causes of fever, including infections such as bacteria and viruses. When the body heat rises, blood vessels dilate to lower the core body temperature, increasing sweat secretion.

In children, a high fever can cause febrile convulsions. Due to a high fever, one becomes mentally confused and unable to understand the surrounding environment, with very unstable emotions, causing conscious and cognitive disturbances such as illusions or hallucinations—that is, delirium.

How did Koreans interpret these symptoms before it was discovered that pathogens are the cause of infectious diseases that result in high fever? In the late Joseon Dynasty, many infectious diseases such as smallpox, measles, and cholera occurred. These “plagues” would spread suddenly and frighten the populace, but they would disappear after a while. The people's awareness and perceptions of plagues can be seen vividly in the tales of that time.

This paper introduces an example of “child fever” from the examples of plagues described in the book Eoyuyadam, published in 1622 by Mongin Yu (1559 - 1623) [1]. Relevant materials were found and verified by searching the Research Information Service System provided by the Korea Education and Research Information Service [2].

In section 159 of Eoyuyadam, related to religion, the following is recorded:

In this era, if a child was afflicted with a plague and had hallucinations, people believed that the child became numinous. Since their parents only responded through prayer, due to ignorance regarding effective treatments for the disease, most children affected by this condition died (Fig. 1). It is truly a pity for clever children to die and disappear from a single illness. People say, “People afflicted with this disease sometimes show magical powers and in other cases engage in strange behaviors. What can they be other than ghosts?”

My thoughts are: Plague causes fever, and heat is fire. The nature of fire is bright, and fire controls the heart. Since the heart is inherently futile, when it has a fever, it becomes as powerful as a ghost and as bright as fire, hearing without hearing and seeing without seeing. That is why an afflicted child is able to respond to external events even in a dark, quiet room,
and sometimes can surprise and deceive people by revealing things they had no way of knowing about in casual talk like sleep talk.

In my opinion, both plague and measles are febrile diseases. This is because heat and fire are so bright that they can see even things that have no form. When women see such things, they put their hands together and pray to God, which is ridiculous.

People said that children affected by plagues were unusually smart and could understand things they had not seen and heard, but Mongin Yu said that even if something like this happens, it is not because the child is smart, but because of the fever, which makes that mind temporarily weak. He criticized others’ viewpoints based on the theory of the five elements as the principle of yin and yang.

In fact, children with high fever and delirium can progress to encephalitis or encephalopathy, especially in cases of influenza infection. Delirium due to hyperthermia requires differentiation from benign parasomnia, which is characterized by fearful expressions, a positive past history, and autonomic nerve symptoms. Instead, in delirium, visual hallucinations occur in association with sleep. Meningeal signs and disturbed consciousness also appear. Marked slowing of the background activity of electroencephalography is a warning sign of delirium [3, 4].

When a fever above 38.5°C persists in children, it is best to first take off all clothes and continue to wipe their head, chest, stomach, armpits, and groin, which generate abundant heat, with tepid water at about 30°C so that the heat can gradually go down. When the body temperature rises, the basal metabolic rate increases, the heart rate increases, and water loss occurs. When the body temperature rises by 1°C, the basal metabolic rate increases by 10 - 12%, the oxygen consumption rate by 13%, the heart rate by 15 beats per minute, and daily insensible water loss increases by 300 - 500 mL per square meter of body surface area. Therefore, it is important to drink plenty of water.
Mongin Yu was critical of the belief that children become spiritual when they are afflicted by a plague. He argued that although people said that children afflicted by a plague were unusually intelligent and could understand things they had not seen and heard, any such cases did not occur as a result of the child becoming intelligent. Instead, he said that this could be a temporary phenomenon. Although he understood the mechanism of fever differently from how it is understood in modern medicine, he recognized that fever causes “mental confusion” and hallucinations. He pointed out that the beliefs about plagues in that era were wrong, and emphasized the necessity of treating sick children.

In Korea, scientific prevention and treatment measures are being implemented in response to COVID-19. However, some people vocalize unscientific and religious opinions and recommend traditional prescriptions. It is worth remembering that a Joseon dynasty scholar, although he worked within a framework based on yin and yang, argued for a relatively empirical and scientific approach to prevention and treatment 400 years ago.

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SUPPLEMENTARY MATERIAL

Supplementary Korean version

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REFERENCES

1. Yu M, Shin IC, Lee HD, Cho YH. Eoyuyadam. Paju: Dolbegae; 2006;277-9.
2. Kwon HR. Disaster situation and the spirit of respect for humanity depicted in Eou-yadam as a disaster literature. The East Asian Ancient Studies 2021;61:9-44.
3. Kashiwagi M, Tanabe T, Shichiri M, Tamai H. Differential diagnosis in children having delirium associated with high fever. No To Hattatsu 2003;35:310-5.
4. Onoe S, Nishigaki T, Kosugi M. Usefulness of EEG recording for delirium in children with high fever. No To Hattatsu 2003;35:29-35.