

Appendix 2. Explanation for patients of minor head injury

▶ Definition of minor head injury

Minor head injury is a case in which a patient with head injury shows minimal symptoms and signs, and no clinically important traumatic brain injury is observed via either physical examination or brain computed tomography (CT). Reliable studies indicate that if there are no symptoms or abnormalities found in the physical examination, clinically important traumatic brain injuries are not present in 99% of patients. In such a case, the patient is discharged without undergoing a CT scan from the hospital and is observed at home for development of any symptoms.

▶ Watch carefully for the following symptoms and signs.

- 1) Any change of mental status: abnormal behaviors, lethargy, change in sleeping tendency, greatly increased difficulty in waking the child
- 2) Prolonged nausea or vomiting more than 5 times
- 3) Headache does not improve or gets worse
- 4) Continued dizziness or difficulty in balancing
- 5) Sensory changes or abnormal movement in the extremities
- 6) Visual disturbance

▶ Explanation of CT scans

Infants and children may experience several incidents of vomiting after a minor impact on the head even in the absence of clinically important traumatic brain injury. Hence, guardians do not need to worry too much even though the patient has vomited a few times.

- 1) However, guardians should notice whether vomiting gets worse, the child's mental status alters, or headache persists.
- 2) Refrain from obtaining a radiological examination if possible. When infants undergo a CT scan, they are exposed to more than 1,000 times the radiation of a chest X-ray. Children are more vulnerable to the risk of radiation from CT scanning. If the infant is exposed to one brain CT scan, the cancer-related death risk is 1 to 8 per 10,000 persons. Therefore, the decision of undergoing a radiology examination should be made after comparing the risks and benefits.