Skull Lacerations: Case Study

Introduction

Lacerations to the scalp are typically blunt force injuries that may damage the skin and the underlying tissues. Sometimes, head injuries may lead to concussions whose symptoms may vary based on the severity of the injury. Classic symptoms of concussions include possible loss of consciousness for a short duration, loss of memory and confusion, dizziness, headaches, drowsiness, nausea, and vomiting. However, these symptoms are highly variable and differ from patient to patient based on the severity of the injury and the patient's health status (Pushkarna 2010). In case of head injuries, it also becomes important to rule out intracranial trauma or fractures that may be done with a CT scan or MRI.

This paper presents a case study where a young 18-year old boy becomes a victim in a fight and sustains a laceration on the occipital region of his scalp outside a pub. The objective of this report is to understand the characteristics and past medical history of the patient, and his presenting symptoms. It then aims to draw correlations between the nature of his injury and his present condition to analyse possible consequences of the injury. It also provides probable diagnoses and assessments that may be required for the patient based on his presenting condition.

Patient Characteristics

The patient, Zac Smyth, is an 18-year old boy who is living away from home. He is financially independent and enjoys socialising with his friends. He also drinks occassionally, especially when he is out with his friends. This living situation implies that the patient is young, adventurous, and social. Not being accountable for money makes him capable of spending on things he likes such as music and alcoholic drinks. The case study also indicates that he is responsible as he chooses to save money by having alcoholic drinks at a friend's house rather than a pub. He is also mindful of societal rules as he backs off when he realizes that he has been talking to someone's girlfriend at the pub. As per his statement, he had consumed 5 alcoholic beverages that may be considered a lot for a boy of his age. As per the NHS guidelines (2018), adolescents between the ages of 16 and 18 should never be allowed to buy alcoholic beverages and they should be allowed to drink only a limited quantity when accompanied by an adult.

The patient's past medical history indicates childhood asthma, although there is no evidence of symptoms of asthma in the patient currently. Childhood asthma leads to impaired quality of life in patients, and is characterised by shortness of breath and frequent wheezing attacks. Studies have shown that the consequences of childhood asthma in adolescents are body pain, impaired mental health, and low self-esteem (Mohangoo et al. 2011). However,

currently there is no information available for the severity of wheezing attacks in childhood and for how many years (if any) the patient has been free of these wheezing attacks.

Patient Information / Cues

When the patient was hurt on his head, he had not lost consciousness; however, he was in pain and had experienced bleeding from his wound. Upon examination, it was found that he had sustained a 4-cm laceration to the occipital region of his brain and it was still bleeding when he was taken to the hospital. Despite the patient being conscious and alert, he was not able to recall all the events from the night, which is a deterioration from his earlier state where he was able to recall all the details of the incident. His systolic blood pressure is high at 141 mmHg and his diastolic blood pressure is slightly high at 88 mmHg.

As the laceration on the patient's head is still bleeding and the patient appears to be losing his recollection of the events, certain assessments need to be made to rule out other worse possibilities. A CT scan needs to be performed to rule out intracranial injury or fractures, because if these are not taken care of immediately, they can result in severe complications for the patient (Hamrah et al. 2018). It is also important to control the bleeding of the wound as lacerations on the scalp can result in significant blood loss, and eventually to hemorrhagic shock (Forsch et al. 2017). A temporary loss of memory a few hours after the incident might be indicative of a concussion, and tests like short-term memory recall and long-term recall can help rule out this possibility (Yengo-Kahn et al. 2016). As the patient records indicate that he is up-to-date with his immunisations and he has had his last tetanus shot about 12 months back, this is not a cause for concern (Collins et al. 2015).

Processing of Patient Information

The patient is an 18-year old male who, on the night in question, had had 5 alcoholic beverages and had gotten into a dispute with a man at the local pub. In the events that followed, he had sustained a 4-cm laceration on the back of his head due to falling and hitting the curb. He had not lost consciousness at all and he was able to recall all events immediately after the injury; however, a few hours later when he was being questioned by the nurse at the hospital, he appeared confused and was not able to recall all the events of the night. Additionally, his bleeding hadn't stopped and there was a small amount of blood still oozing from the wound.

Given his confusion and loss of memory a few hours after the incident, it is likely that the patient may have sustained a concussion to his head. Concussions are mild traumatic brain injuries which occur due to forceful blows to the scalp and may result in disruption of normal brain function (Mullally 2017). Typically, concussions do not lead to a loss of consciousness; however, they do affect physical, mental, emotional, cognitive, and sleep cycles of patients.

Concussions are difficult to diagnose and so, they might go unnoticed in most cases (Tator 2013). In the patient's case, the most striking and probable sign of concussion is verbal confusion (GCS – 4) and inability to recall events of the night a few hours after the incident. Another factor of importance here is that the patient has had 5 alcoholic drinks in the duration of a few hours. The effect of alcohol in the system may lead to delayed healing of skin wounds and lacerations and therefore, the patient needs to be closely monitored for signs of worsening of the wound (Jung et al. 2011).

Conclusion

In conclusion, the patient's injury seems to be mild based on the fact that he has not lost consciousness, has stable vital signs, and is only mildly confused. However, the patient's condition needs to be closely monitored for signs of a possible concussion. Additionally, the wound is still showing signs of mild bleeding, which need to be taken care of immediately. Further assessments need to be made through a CT scan for possible skull fracture or intracranial injury. The fact that the patient has had 5 alcoholic beverages in a matter of a few hours may delay the wound healing process, and he needs to be under medical supervision until he shows definite signs of improvement.

References

Collins, S., White, J., Ramsay, M. and Amirthalingam, G., 2015. The importance of tetanus risk assessment during wound management. *IDCases*, 2(1), pp.3-5.

Forsch, R., Little, S. and Williams, C., 2017. Laceration Repair: A Practical Approach. *American Family Physician*, 95(10), pp.628-637.

Hamrah, H., Mehrvarz, S. and Mirghassemi, A., 2018. The Frequency of Brain CT-Scan Findings in Patients with Scalp Lacerations Following Mild Traumatic Brain Injury; A Cross-Sectional Study. *Bulletin of Emergency and Trauma*, 6(1 JAN), pp.54-58.

Jung, M., Callaci, J., Lauing, K., Otis, J., Radek, K., Jones, M. and Kovacs, E., 2010. Alcohol Exposure and Mechanisms of Tissue Injury and Repair. *Alcoholism: Clinical and Experimental Research*, 35(3), pp.392-399.

Mohangoo, A., de Koning, H., de Jongste, J., Landgraf, J., van der Wouden, J., Jaddoe, V., Hofman, A., Moll, H., Mackenbach, J. and Raat, H., 2011. Asthma-like symptoms in the first year of life and health-related quality of life at age 12 months: the Generation R study. *Quality of Life Research*, 21(3), pp.545-554.

Mullally, W., 2017. Concussion. *The American Journal of Medicine*, 130(8), pp.885-892.

NHS, 2020. *Should My Child Drink Alcohol?*. [online] nhs.uk. Available at: <https://www.nhs.uk/common-health-questions/childrens-health/should-my-child-drink-alcohol/> [Accessed 29 August 2020].

Pushkarna, A., Bhatoe, H. and Sudambrekar, S., 2010. Head Injuries. *Medical Journal Armed Forces India*, 66(4), pp.321-324.

Tator, C., 2013. Concussions and their consequences: current diagnosis, management and prevention. *Canadian Medical Association Journal*, 185(11), pp.975-979.

Yengo-Kahn, A., Hale, A., Zalneraitis, B., Zuckerman, S., Sills, A. and Solomon, G., 2016. The Sport Concussion Assessment Tool: a systematic review. *Neurosurgical Focus*, 40(4), p.E6.