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CASE REPORT

A Miracle Survival after Falling from Height: A Case Report

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Abstract

Falling from height is an urban phenomenon and shows an important form of blunt trauma. We report an 18-year-old man who fell from 6 m height onto vertical steel rods in an under construction building. He went under surgery to remove two foreign bodies and was discharged on the 2nd day after surgery in good conditions. The objective of this report is to provide a definitive baseline to improve the incidence rate of fall from height. It is better to consult with key stakeholders in the workplace to gain a view on the key issues relating to fall from height. Similarly, it is good to use the available measurements in order to control and prevent those at risk.

Key Words: Survive; Accidental Falls; Injury

Introduction

Falling is the most significant cause of morbidity and mortality. Falls account for the primary cause of injury in admission at most trauma centers, especially when the victims are children. Factors that are associated with falls and influential on the seriousness of injury include orientation on falling and the landing surface. Factors which contribute to falls from heights include both human factors such as intoxication and inattention and faulty equipment such as ladders and scaffold structures. The most common type of accident in occupational settings is fall from height (1). Falling from a height of 20 feet or above have been triaged to trauma centers, yet low-level falls may also cause serious head injuries (2,3).

Cases

A worker aged 18 was pushed at night by another person to fall from 6 meter height onto steel rods in a building under construction. On arrival to the trauma center, vital signs were stable, and he was fully alert. The heart, lungs, and the neurologic system were normal. Emergency procedures were performed, and the patient was sent for required radiographies. In the operating room, two foreign bodies were removed under general anesthesia (Figure 1). The wounds were washed, dressed, and treated with antibiotics. The patient was discharged on the 2nd day after surgery. Postoperative facial nerve neurologic examination was performed at the site of injury after operation, and there was a great degree of numbness which was checked in follow-ups. On physical examination, there was no problem around the wounds of the temporal and the abdominal wall and underarm area. Sutures were removed from the face region on the 7th day and from the abdominal wall and underarm area on the 12th day after surgery.

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Figure 1: CT scan of two foreign bodies in facial and abdominal wall and underarm area

Discussion

Working at height is characteristic of many industrial occupations but safety measures must be put in place to prevent the risk of accidents. If these fail, serious injuries or death may be expected. There are certain jobs which involve working above ground level including painting, decorating, and construction work.

In very high falls, bodies can reach terminal velocity. The speed of fall overrides significantly the air resistance leading to the acceleration due to gravity. Therefore, at the terminal velocity, one may fall as far and as fast as one desires (4). While even short falls can be life-threatening, people have survived horrific falls. In 1972, Vesna Vulovic, a cabin attendant, survived a 10,160 m fall (4). A fall can cause very serious injuries, including spinal cord injury, fractures, concussions and brain damage (5). Analysis has shown that the risk of injury from a fall increases significantly for falls from two meters or more (6).

Study of Tuma *et al*. (7) showed that falling from height at a construction site is a common cause of trauma that states a significant financial burden on the health care system. Prevention of injury is warranted with the enforcement of occupational laws. Most of the deaths are falls at home and not in the workplace (8). Studies have shown that construction sites are dangerous for workers and lead to increased number of occupational fatalities (9). Study of Lapostolle *et al*. (10) showed that the criteria such as patient age, height of fall, impact surface nature, and body part first touching the ground could be the prognostic factors in victims of falls from height.

There is a high risk of injury due to the fact that construction sites involve working at a certain height, meaning that health and safety guidelines must be implemented. Even a fall from a low level can cause an injury and in some cases this can have long-term effects. A fall may result in time off work which ranges from a few days off to several months.

For an effective prevention of injuries and fatalities from fall, workplace-related risk factors need to be determined. However, there is limited evidence of any injury prevention program that can be effective in reducing work-related injuries (11). Supervision of occupation related to fall injuries should continue to improve safety in the workplace.

Conclusions

Most cases of death are due to falls from height and occur in adult males in the age of 21-50 years. Majority of falls are accidental from terrace or balcony. The potential risk controls includes:

- There is a need to take action to raise workers' awareness of a situation and improve their perception of risks.
- Achieving compliance on site even when safe methods of working are provided.

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- Using safety equipment. The key issue for choosing the equipment is ensuring that companies are aware of equipment and that they select the right equipment for the job.
- Encouraging the workers to use the more relevant procedures.
- Improving supervision to modify compliance and safety culture.
- Using better design to reduce risks and eliminate hazards
- Encourage client ownership to have a health and safe job

Therefore, training is felt to be a cross-cutting issue which can support the control measures of potential risks.

Conflict of Interest: None declared.

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