

Accidental fatal injuries by wood cutting machine : A Case Report.



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Abstract

Background: Industrial settings pose significant risks for severe injuries, particularly with the use of wood cutting machines. These machines, essential in forestry and construction, combine sharp blades and powerful motors, making them highly hazardous. Annually, they are responsible for numerous severe injuries and fatalities worldwide. These accidents typically result from operational errors, insufficient use of personal protective equipment (PPE), and lack of proper training. Enhancing safety measures is crucial in reducing these incidents.

Case Report: This case involves a 37-year-old male who suffered fatal injuries from a wood cutting machine accident at a wood processing facility. The machine malfunctioned and toppled onto the victim while in operation, causing multiple deep lacerations across his face, neck, and upper chest, leading to significant blood loss. Despite immediate medical interventions, including volume resuscitation and emergency blood transfusion, the victim succumbed to massive blood loss due to transected major vascular structures in the neck. Autopsy findings confirmed the cause of death as massive blood loss compounded by traumatic injuries.

Conclusion: This tragic incident underscores the critical need for stringent safety protocols and proper operator training in the use of wood cutting machines. Regular maintenance checks, the use of advanced PPE, and the establishment of a safety-first culture within industrial settings are essential. By learning from such incidents and implementing robust preventative measures, the likelihood of similar accidents can be significantly reduced, thereby safeguarding workers' lives in these high-risk environments.

Keywords:- Wood Cutting Machines, Occupational Injuries, Safety Measures, Neck Vessels

INTRODUCTION

Accidental injuries in industrial settings pose significant health risks, often leading to severe trauma or death. Among the various machinery involved, wood cutting machines are notorious for their potential to inflict catastrophic injuries due to their sharp blades and powerful motors.

Wood cutting machines are essential tools in the forestry and construction industries due to their efficiency in processing large volumes of wood.

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However, the combination of their sharp blades and powerful motors makes them some of the most hazardous equipment in industrial and agricultural settings. Annually, a significant number of severe injuries and fatalities associated with wood cutting machines are reported globally. The literature consistently highlights the risk factors associated with these machines, including the lack of adequate safety measures, improper use of personal protective equipment (PPE), and insufficient training of machine operators.¹

The dynamics of accidents involving wood cutting machines are complex, involving high-speed interactions between the worker and the mechanical components of the machine. Common injuries include severe cuts, amputations, and fatal lacerations, often exacerbated by the powerful kinetic energy of the machine's cutting mechanisms. The analysis of these incidents reveals a pattern of preventable mishaps, which could be mitigated through rigorous adherence to safety standards and regular maintenance checks.² Enhancing safety around wood cutting machines is not merely a regulatory compliance issue but a critical public health concern. The adoption of stringent safety protocols, the enforcement of protective gear usage, and the provision of comprehensive training programs are essential measures to reduce the incidence of these accidents. Moreover, fostering a culture of safety and awareness among workers is crucial for minimizing the risk of injuries.³

This case report details a tragic incident involving a 37-year-old male who sustained fatal injuries from a wood cutting machine accident at his workplace. The victim suffered extensive injuries to his face, neck, and chest, leading to massive blood loss and subsequent death, despite immediate surgical interventions.

The significance of such cases extends beyond the individual. They highlight critical lapses in workplace safety and operational protocols. The literature suggests that accidents involving wood cutting machines typically result from operational errors, mechanical faults, or safety protocol lapses, often causing serious or fatal injuries.⁴

CASE REPORT

A 37-year-old male presented with severe injuries sustained during an accident at a wood processing facility.

The injuries were a direct result of a wood cutting machine malfunction that caused the equipment to topple onto the victim while in operation. Upon admission to the emergency department, the patient exhibited multiple deep lacerations across the face, neck, and upper chest, with significant blood loss noted.

Immediate resuscitative measures were taken, including volume resuscitation and emergency blood transfusion, given the massive blood loss and the critical nature of the injuries. The most severe wounds were located over the left side of the face and neck, with a surgically stapled wound measuring 46 cm indicating prior medical intervention aimed at controlling hemorrhage from the major neck vessels.

Post-mortem examination revealed that despite surgical interventions, the transaction of major vascular structures in the neck led to irreversible massive blood loss. Dissection during the autopsy showed that the left external and internal jugular veins and the left common carotid artery were transacted. The autopsy further noted contusions over the muscles at the upper part of the left chest, though the larynx and trachea remained intact. The cause of death was determined to be massive blood loss due to the transaction of major neck vessels, compounded by severe traumatic injuries.



Figure 1:- Autopsy showing Transacted left external and internal jugular veins and the left common carotid artery

DISCUSSION

The tragic fatality discussed in this case report underscores the significant risks associated with the operation of wood cutting machines in industrial settings. This incident not only highlights the potential for severe injuries and death but also stresses the importance of stringent safety measures and proper training. In analyzing similar cases and reviewing the literature, a clear pattern emerges that suggests many such accidents could be prevented with more rigorous safety protocols and equipment maintenance.

Previous studies have documented similar cases where lapses in safety protocols and equipment malfunctions led to severe injuries or fatalities. For instance, a case reported by Taber (1988) discussed a fatal accident involving a chain saw, where the operator was severely injured due to kickback from the machine, leading to catastrophic injuries similar to those seen in our case.⁵ Another pertinent case was analyzed by Fernie et al (1994), where the death of a worker was attributed to multiple lacerations from a chainsaw, which like our case, highlighted the critical need for PPE and adherence to safety guidelines.⁶

In light of these precedents, our case further emphasizes the complexities involved in ensuring safety in the operation of high-risk machinery. The accidental activation or malfunction of such equipment can lead to rapid sequences of injury-inducing events that are difficult to control once initiated. This highlights the necessity for preventive measures such as the implementation of machine guards, emergency shutoff mechanisms, and routine checks for mechanical integrity.⁷

Additionally, the forensic examination of the accident site in such cases reveals overlooked malfunctions or wear that could have been identified with regular maintenance checks. Such findings are critical in reinforcing the importance of comprehensive training for all operators, which should include not only the use of the machine but also the identification of potential mechanical failures and the steps to take in an emergency.⁸

The role of personal protective equipment (PPE) cannot be understated. In our case, while the victim did receive immediate medical attention, the severity of the injuries was such that more advanced or specific types of PPE might have mitigated the extent of the trauma.

This aligns with recommendations from multiple studies advocating for the mandatory use of helmets, face shields, and protective clothing when operating any high-risk machinery.⁹

This incident also calls for a broader consideration of the cultural and organizational aspects of workplace safety. Establishing a safety-first culture within industrial and forestry sectors is paramount. This involves not only training and equipment but also creating an environment where safety protocols are consistently reviewed, updated, and strictly enforced. Moreover, empowering employees to report potential safety issues and participate in safety audits can be a proactive approach to prevent such accidents.¹⁰

In conclusion, this case serves as a poignant reminder of the dangers inherent in the use of industrial machinery and the dire consequences of neglecting safety protocols. It underscores the need for a multifaceted approach to safety, encompassing rigorous training, regular equipment maintenance, and a strong organizational commitment to safety practices. By learning from such incidents and implementing robust preventative measures, the likelihood of similar fatalities can be significantly reduced.

CONCLUSION

It is important to analyze the mechanisms underlying wood cutter saw injuries to ascertain the cause of death accurately. Prioritizing the implementation and strict adherence to safety protocols, including the use of protective headgear and personal protective equipment, is essential in reducing or preventing such injuries. Furthermore, fostering a heightened risk awareness among workers is a critical component in the prevention of these fatal incidents.

Conflict of interest

None

Source of Funding

None

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Author Contribution:-JMK Concept Of Design; Manuscript Preparation; Revision Of Manuscript; Review Of Manuscript

How to cite This Article:-

Jason MK, **Accidental fatal injuries by wood cutting machine : A Case Report** *Int. j. med. case reports*. 2024; 5 (2): 4-7

Received: 20 January 2024

Revised: 10 February 2024

Accepted: 15 March 2024