Fall from walnut tree: an occupational hazard

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Introduction

Falls are a significant cause of morbidity and mortality. The factors determining the probability of serious injury in a fall are the distance (height) of the fall, the landing surface and orientation on falling. In occupational settings, the most common type of accident is a fall from a height. The brain, spinal cord and extremities are the most commonly injured organs. Falls from more than 20 ft have historically been triaged to trauma centres, but even low-level falls can cause serious head injuries.

Falls from walnut trees are a leading cause of morbidity and mortality in Kashmir. Walnut is harvested in a crude traditional method that is highly risky.

KEYWORDS
Walnut tree; Morbidity; Mortality

Summary

Background: Falls from walnut trees are a frequent cause of morbidity and mortality in Kashmir. This study has been undertaken to evaluate the resultant disabilities and identify methods to prevent such injuries. Methods: A retrospective study was conducted by the Accident and Emergency Department in which case histories (available in Medical Records Department) of all patients with falls from walnut trees were studied and analysed. Results: The patients are young and robust males. The cervical spine injuries are most common (27.50%) followed by brain contusion (26.43%). Mortality is 24.13%. About 18% of patients get permanent disability (paralysed for life). Conclusion: The significant mortality and morbidity associated with falls from walnut trees is due to crude traditional methods applied in collection of walnuts. If the farmers are educated and more scientific methods based on common sense used many lives can be saved. Falls from walnut trees need to be included as an occupational hazard in medical literature.

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Methods

A retrospective study was conducted by the Accident and Emergency Department at a premier
teaching hospital cum referral centre (Sher-e-Kashmir Institute of Medical Sciences). The case summaries of all the patients of falls from walnut trees (during January 1999—December 2002) available in the Medical Records Department were studied and reviewed in detail. The nature of injuries and the resultant disabilities were analysed.

Results

A total of 87 patients having injuries due to a fall from a walnut tree were admitted in the Accident and Emergency Department during 1999–2002. Forty-one (47.1%) patients were admitted in the months of September (1999–2002), 31 (35.63%) in August (1999–2002), 10 (11.5%) in October (1999–2002) and 5 (5.7%) patients were admitted during other months.

Mean age 36.3 years (range: 18–55 years)
Sex All the patients were male

The mean delay in reaching the Accident and Emergency Department for medical care since time of injury is 4.2 h (range 2–8.5 h). No relationship has been found between mortality and delayed visit to Accident and Emergency Department (Note: In seven patients time of injury was not known, hence excluded).

Many of the minor injuries due to fall and some on the spot deaths might never be reaching the Accident and Emergency Department of this premier medical institute, but it is difficult to assess the magnitude.

Most patients had multiple injuries with head injury predominating (54.02%) followed by spinal injuries (44.82%). 24.13% patients had chest injuries and 17.24% had abdominal injury. 26.43% of patients had concomitant limb injuries (Table 1).

Discussion

Walnut (as other fruit) is one of the important sources of income in Kashmir. Walnut is a dry fruit with a tremendous export potential. Besides this the timber from walnut is used for making wood carved furniture. Walnut is grown all over Kashmir valley. The area under cultivation of walnut is 35,233 ha. The average annual production of walnut is 67554 metric tonnes. There are approximately 5,004,000 walnut trees in Kashmir valley. It is very difficult to estimate the accurate figure of population at risk. Approximate population involved in walnut harvesting is 40,000.

Walnut trees are huge trees that grow up to the height of 40–50 ft and the bark of these trees is very slippery. When the traditional farmers climb these trees carrying a long stick in their hand to hit the fruit, they lose their balance resulting in a fall from the tree. Cases of falls from these trees report to Accident and Emergency Department for medical care almost exclusively in the months of August, September and October which is the harvesting season, making it an occupational hazard.
The fall from walnut tree is an occupational hazard of traditional farmers and a common cause of severe, crippling and often multiple injuries. The patients affected are usually young and robust males. Cervical spine injuries are the most common (27.50%) followed closely by brain contusion (26.43%). Many patients have multiple injuries. The mortality rate is considerable (24.13%). About 18% of patients are rendered paralysed for life. Although no relationship was found between mortality and a delayed visit to hospital we think the number is too small to draw any absolute conclusions.

In the Solomon Islands, similar types of injuries have been found in relation to coconut palms. Injuries there were due to fall from coconut palm (85 patients), due to fruit fall on them (16 patients) and 3 patients had coconut palm tree fall on them. 60.1% of patients had fractures and 16.3% patients had spinal injuries. Most common fractures were skull and long bones. 6 They used school education for educating children about the chances of coconut palm injuries. Parents were also warned of dangers of coconut palm tree injuries. In another study, accidental falls from tree stands were seen to result in significant spinal fractures often associated with concomitant neurologic injuries. 1 They again used aggressive safety education for preventing such injuries. 1 Ebong studied sixty consecutive patients who fell out of trees in a year. 2 They again found that spinal injury was the most frequent type of injury in these patients. 2 Such type of injuries are also common in Mississippi due to fall from tree stands and researchers at Department of Family Medicine, University of Mississippi have recommended using of safety harnesses, which can greatly decrease morbidity and mortality associated with falls. Such devices can be worn around the chest under both arms. 3 Safety tips such as removal of logs, stones around the base of tree are helpful. 3

Conclusion

The significant mortality and morbidity associated with fall from walnut trees is due to crude traditional methods applied during collection of fruit (walnut). Many lives could be saved if the farmers are educated and more scientific methods based on common sense used. One such method can be manufacture of tree stands about 20—30 ft above ground and use of non-slip boots. Use of safety harnesses such as head gear, chest and abdomen gears is recommended. Fall from walnut tree needs to be included as an occupational hazard in medical literature.

References