Open Acces
Scientific Reports

Open Access Scientific Reports

Research Article Open Acces

Keywords: Injury; Trees; Fall; Walnut tree

Introduction

Fall from trees are rare and may lead to severe consequences [1]. Trees responsible for most of the deaths and injuries include the coconut palm, betel palm, mango, and breadfruit [2]. Fall from walnut tree is a signi cant occupational risk in Kashmir which is amenable to public health interventions [3]. Injuries due to falling from the walnut tree are not unusual in parts where it is grown. Most commonly implicated in tree fall injuries overall is the fall from walnut tree in Kashmir. In Kashmir, climbing walnut tree to harvest walnuts is an important part of rural life and the means of livelihood. e harvest season falls during the months of September and October. Adults climb to collect fruits from various trees but o en children climb trees while playing and collecting fruits in excitement. e traditional method of harvesting the walnut crop is notorious for fall and in icting injury. e conventional methods of climbing these trees and either using a long stick or is resorting to vigorous shaking to dislodge the fruit. Abdominal and chest trauma are also seen quite frequently [4]. Fall from walnut trees constitutes an important entity that leads to a signi cant mortality and morbidity amongst those engaged in fruit collection [5]. Trauma prevention programs directed toward heightened public awareness of these injuries during harvesting season are needed. e aim was to the pro le of abdominal injury su ered from fall from walnut tree.

Type of abdominal organ injury	No. of Patients
Splenic laceration	8
Liver Trauma	3
Kidney Trauma	2
Hemmorhage in cyst of APKD(Hit by falling branch)	1
Gut Perforation	2
Mesenteric Tear	1
Others	5

Table 3: Showing abdominal viscera injured.

Discussion

In tree related injuries, fall from a tree is the most common cause of injuries [6]. Injuries resulting from a fall from a walnut tree are commonly restricted to a particular season usually in harvesting season [7]. Farmers or labourers involved in harvesting walnuts are mostly injured. In view of being a seasonal injury, emergency health resources of the region are swamped over a small period of time [4]. Fall from walnut tree usually a ects single person. e risk of fall increases with age [8]. Climbing the trees, usually barefooted, and striking at its branches with long sticks, the very length of which necessitates the use of both hands is the traditional method of harvesting the walnut crop. Vigorous shaking of the branches may be attempted to dislodge the fruit. Harvesting of walnut is done before attaining full ripeness. Fruit being attached more tenaciously to the tree at this stage neccesiating more force required to be exerted to detach fruit, usually leading unbalance and fall. e slippery nature of the bark adds to the probability of fall. e second pattern of fall is the branch giving way while the worker is perched on the branch. ere is no formal training to farmers in harvesting walnut from climbing trees. Children sustain injuries sometimes to carry out the of fruit or sometimes climb tree for playing in harvesting period and in during the post-harvest phase they climb these trees to claim the residual fruit. In non harvesting season, fall is seen usually in children who climb walnut tree for playing. Age of person, height of the fall, landing surface, orientation at the time of hitting the surface determines type and severity of injuries [9]. Nature of the injuries is varied by horizontal, rotational and gravitational forces acting upon the falling body.

Most common injury in icted from walnut tree fall is skeletal injury [10]. Type of abdominal injury in icted from fall from walnut tree is determined by part of abdomen having brunt on tree branches or on ground. Spleen is commonest organ damaged in fall from walnut tree followed by liver. is is same as spleen most common organ damaged in blunt abdominal trauma. Laceration in solid viscera is usually one or two most o en managed conservatively in liver and kidney. Mesenteric tear or gut perforation is single. Hemorrhage in cyst of APKD (Adult Polycystic kidney disease) is to be managed conservatively. Patients from walnut tree o en have a polytrauma. A whole body computed tomography scan is needed for diagnosis of any unsuspected injury. A polytrauma requiring surgical intervention for any injury has morbidly of associated injury.

e following measures are suggested to prevent the morbidity and mortality attributable to harvesting walnuts [11]. Cultivation of gra ed walnut trees, a simulating measure adopted in West Africa where with the introduction of gra ed dwarf palm trees, incidence of trauma due to fall from a palm tree has decreased considerably [12]. Imparting proper education to farmers regarding the proper time of harvest of walnut crop will be a safety measure. Legislation allows only the properly trained personnel to carry out harvesting. ese preventive measures are similar as based on legislation in Georgia and Louisiana for tree-stand related injuries and deer stand falls respectively [13]. Designing protective gear and tethering of the harvesting farmer or laborer by a proper restraining apparatus to prevent them from falling to the ground could be preventive measure for preventing injuries from fall from walnut tree. Stopping small boys climbing walnut trees could avoid injuries in children [2].

Conclusion

e falling from walnut trees is common in harvesting season .Skeletal injuries are common. Spleen is commonest organ damaged in abdominal trauma from fall from walnut tree. Proper education, training and legislation will reduce incidence of injury from fall from walnut tree.

References

1. Zargar M, Khaji A, Karbakhsh M (2005) Injuries caused by falls from trees in Tehran, Islamic Republic of Iran. East Mediterr Health J 11: 235-239.
2. Barss P, Dakulala P, Doolan M (1984) Falls from trees and tree associated injuries in rural Melanesians. Br Med J (Clin Res Ed) 289: 1717-20.
3. Syed A Tabish, Rauf A Farooq A. Jan, Tahir Rasool, Imtiyaz Geelani, Baqual M Farooq (2004) Fall from walnut tree: an occupational hazard. Injury Extra. 35: 65-67.
4. Metz M, Kross M, Abt P, Bankey P, Koniaris LG (2004) Trees and falls: a persistent cause of sports injury. South Med J 97: 715-719.
5. Baba AN, Paljor SD, Mir NA, Maajid S, Wani NB, et al. (2010) Walnut tree falls as a cause of musculoskeletal injury-a study from a tertiary care center in Kashmir. Ulus Travma Acil Cerrahi Derg 16: 464-468.
6. Okonkwo CA (1988) Spinal cord injuries in Enugu, Nigeria--preventable accidents. Paraplegia 26: 12-18.
7. Nabi DG, Rashid TS, Kangoo KA, Ahmed DF (2009) Fracture patterns resulting from falls from walnut trees in Kashmir. Injury. 40: 591-594.
8. Ebong WW (1978 Falls from trees. Trop Geogr Med. 30: 63-67.
9. Demetriades D, Murray J, Brown C, Velmahos G, Salim A, et al. (2005) High-level falls: type and severity of injuries and survival outcome according to age. J Trauma 58: 342-345.
10. Mulford JS, Oberli H, Tovosia S (2001) Coconut palm-related injuries in the 3 D F L ¿ F , V O D Q G V $ 1 = - 6 X U J
11. Wani M, Bali R, Salllem I, Hamdani I, Wani M (2013) Pattern of trauma related to walnut harvesting and suggested preventive measures. Clinical Reviews and Opinions 5.
12. Courtney TK, Matz S, Webster BS (2002) Disabling occupational injury in the US construction industry, 1996. J Occup Environ Med 44: 1161-1168.
13. Lawrence DW, Gibbs LI, Kohn MA (1996) Spinal cord injuries in Louisiana due to falls from deer stands, 1985-1994. J La State Med Soc 148: 77-79.