

Injuries Due to Fall from Horseback

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Abstract

The incidence of injuries due to falls from horse increased after horseback riding has become a popular sport. However, it should also be kept in mind that in agricultural settings where the horses are used for transportation similar injuries are commonly encountered as well. Patients who were admitted to Kars State Hospital Emergency Department following horseback riding injuries between April 2020 and October 2020 were retrospectively screened. Data on 24 patients with injuries due to falls from horseback were recorded. 23 patients were male (95,83%) while 1 patient was female (4,17%). The youngest patient was 6 years old; the oldest patient was 73 years old, and the median age was 22. 4 (16,7%) of the patients had lower extremity injuries while 20 (83,3%) had upper extremity injuries. All of patients with lower extremity injuries were operated on. On the other hand, 3 (15%) of the 20 patients with upper extremity injuries were operated, while the remaining 17 (85%) patients were treated conservatively. Critical injuries may be expected following horseback riding accidents. Injuries due to falls from horseback may range from soft tissue contusions to fractures requiring surgical treatment.

Keywords: Injuries due to falls, horseback riding

Introduction

Horseback riding has become a popular activity all over the world, both as a competitive sport and as a therapeutic modality. However, in rural and agricultural areas, horses continue to be used as a means of transportation rather than recreational purposes.

Kars is a city that is located in the Eastern Anatolian region and where majority of the inhabitants are engaged in agriculture and livestock farming. Therefore, the number of patients injured due to falls from horseback increases especially during spring and summer.

There are few published studies in the literature regarding injuries due horseback riding. This study aims to investigate the incidence of injuries due to falls from horseback and raise awareness about this particular matter in Kars.

Material and Methods

Patients who were admitted to Kars State Hospital Emergency Department following horseback riding injuries between April 2020 and October 2020 were retrospectively screened. Data regarding demographics, type of injury and details of diagnosis and treatment were extracted from patients' files. Kafkas University Medical Faculty Ethics Committee approval was obtained. (80576354-050-99/293)

Results

A total of 24 patients who were admitted to the emergency department following falls from horseback were included. While 23 (95,83%) of patients were male, 1 (4,17%) of them was female. The youngest patient was 6 years old; the oldest patient was 73 years old, and the mean age was calculated to be 22. Four (16,7%) of the patients had lower extremity injuries, 20 (83,3%) had upper extremity injuries. Of the 14 upper extremity injury cases, 11 were on the right side while the remaining 9 were on the left side. Of the 4 lower extremity injury cases, 2 was on the left side and 2 was on the right side. All of the patients with lower extremity injuries were operated on. On the other hand, 3 (85%) of the 20 patients with upper extremity injuries were operated, while the remaining 17 (85%) patients were treated conservatively. Lower extremity injuries included a patella sleeve fracture (1 patient) and a tibia shaft fracture (3 patient). 3 patients who were operated on for upper extremity injuries, two patients had both elbow dislocation and medial epicondyle fracture and other patient had radius shaft fracture. Closed reduction and cast immobilization were performed on 2 patients with distal radius fractures. Sling immobilization was applied to 3 patients, 2 patients had a fracture of the scapula, and one patient also had a clavicle fracture, and 1 patient had a proximal humerus fracture. Cast immobilization was performed in one patient due to scaphoid distal pole fracture.

Table 1: Demographic characteristics, type of injuries and treatment outcomes in patients

	Age	Gender	Side	Type of injury	Treatment
Patient 1	67	Male	Left	Distal Radius fracture	Closed reduction and cast immobilization
Patient 2	17	Male	Right	Distal epiphysis Radius fracture	Closed reduction and cast immobilization
Patient 3	51	Male	Right	Scapular body fracture	Sling immobilization
Patient 4	15	Male	Right	Distal metaphysis Radius fracture	Closed reduction and cast immobilization
Patient 5	22	Male	Left	Scaphoid distal pole fracture	Cast immobilization
Patient 6	9	Male	Left	Elbow dislocation and medial epicondylar fracture	Closed reduction for dislocation and open reduction internal fixation for fracture
Patient 7	6	Male	Left	Both bone forearm fracture	Closed reduction and cast immobilization
Patient 8	24	Male	Left	Distal Radius fracture	Closed reduction and cast immobilization
Patient 9	73	Male	Left	Scapular body fracture and mid-shaft clavicle fracture	Sling immobilization
Patient 10	9	Male	Right	Monteggia fracture	Closed reduction and cast immobilization
Patient 11	14	Male	Left	Patella sleeve fracture	Open reduction internal fixation
Patient 12	16	Male	Right	Tibia shaft fracture	Closed reduction and intramedullar nailing
Patient 13	17	Female	Right	Lateral ulnar collateral ligament injury	Immobilization with posterior splint
Patient 14	12	Male	Right	Elbow dislocation and medial epicondylar fracture	Closed reduction for dislocation and open reduction internal fixation for fracture
Patient 15	11	Male	Left	Both bone forearm fracture	Closed reduction and cast immobilization
Patient 16	16	Male	Left	Elbow dislocation and distal metaphysis Radius fracture	Closed reduction and cast immobilization
Patient 17	43	Male	Left	Radius shaft fracture	Open reduction internal fixation for lateral malleol
Patient 18	11	Male	Right	Distal epiphysis Radius fracture	Closed reduction and cast immobilization
Patient 19	15	Male	Right	Tibia shaft fracture	Closed reduction and intramedullar nailing
Patient 20	14	Male	Right	Distal metaphysis Radius fracture	Closed reduction and cast immobilization
Patient 21	14	Male	Right	2. metacarp fracture	Immobilization with posterior splint
Patient 22	16	Male	Right	Distal ulna fracture	Immobilization with posterior splint
Patient 23	17	Male	Right	Proximal humerus fracture	Sling immobilization
Patient 24	20	Male	Left	Tibia shaft fracture	Closed reduction and intramedullar nailing

Closed reduction and cast immobilization were performed on 2 pediatric patients with both bone forearm fractures, 1 pediatric patient with a Monteggia fracture, 1 pediatric patient with elbow dislocation and distal radius metaphysis fracture, 2 pediatric patients with a distal radius epiphysis fracture and 2 pediatric patients with distal radius metaphysis fracture. Immobilization with posterior splint was applied to a pediatric patient with lateral ulnar collateral ligament injury, a pediatric patient with 2. Metacarp fracture and a pediatric patient with distal ulna fracture.

Discussion

Injuries due to falls from horseback are common and usually occur in the setting of recreational activity¹. Several studies have assessed these injuries in terms of demographics, mechanism, pattern and severity of injury in different regions of the world. Since the severity of injuries due to falls from horseback may be culturally and regionally affected, the present study aims to characterize the aforementioned injuries. These injuries are more common in females because horse riding is more popular among females [1]. However, in our study, the number of male patients was significantly higher. This find-

ing could be explained by the use of horses for agricultural, as opposed to recreational, purposes in Kars.

Similar to the previously published findings, the number of upper extremity injuries were higher than the number of lower extremities injuries [2]. Surgical treatment is preferred more frequently in lower extremity injuries than upper extremity injuries. The underlying reason may be that lower extremity fractures generally require more surgical interventions.

While 5 (31,25%) patients were adults, 11 (68,75%) patients were identified as pediatric patients. This may be due to the fact that adults are more experienced in horseback riding than children. The mean age in the pediatric patient group was 12.9 years. Similar to another study [3], an increased incidence of injuries was found among adolescents, which may be associated with longer duration of horse riding in adolescents compared to younger children.

Injuries due to horseback falls can cause a variety of conditions ranging from simple soft tissue contusions to major bone fractures that require surgery. Patients with extremity injuries that require intervention are consulted with the department of Orthopedics and Traumatology. Therefore, patients with soft tissue contusion, head, spine, chest and abdominal injuries were

not included in the study. A large-scale study including other injuries would more clearly reveal the severity of injuries due to falls off horseback.

Conclusion

Major injuries may be encountered in patients who admit to the emergency department following falls from horseback. These injuries may be soft tissue contusions or fractures requiring surgical treatment. Pediatric patients are more susceptible to injury. It is of utmost importance that all patients are thoroughly and carefully examined following falls from horseback.

The authors declare no conflict of interest.

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