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Contemporary Themes

Horse-play: Survey of Accidents with Horses

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Summary

Horse-riding is increasing in popularity. During 1971 and 1972 154 patients had horse-related injuries of sufficient severity to warrant admission to the Radcliffe Infirmary. The injuries sustained are more common and more severe than generally appreciated and are comparable to those sustained by motor-cyclists. Supervision of children is often insufficient and protective leg and head gear is commonly quite inadequate, even when worn.

Introduction

Horse-riding is a common pursuit in the area served by the Accident Service of the Radcliffe Infirmary, Oxford, both as a hobby and professionally. The area has a population of about 450,000 and there are an estimated 3,000 to 4,000 horses used for riding. With the increase in popularity of the sport it was felt that the risk and the injury pattern should be clarified. This survey is of persons who received hospital inpatient treatment in 1971 and 1972 for injuries sustained in connexion with horses. Patients treated solely as outpatients are not included. During the two-year period 8,768 patients were admitted to the accident service and 154 had horse-related injuries. Total inpatient time for the 154 patients was 614 days. That is, one bed was almost constantly occupied by a victim of such an accident.

The distribution of patients according to age and sex is shown in fig. 1. A high proportion of patients were teenagers, with 90 patients under 21 years of age. Two-thirds (109) of the patients

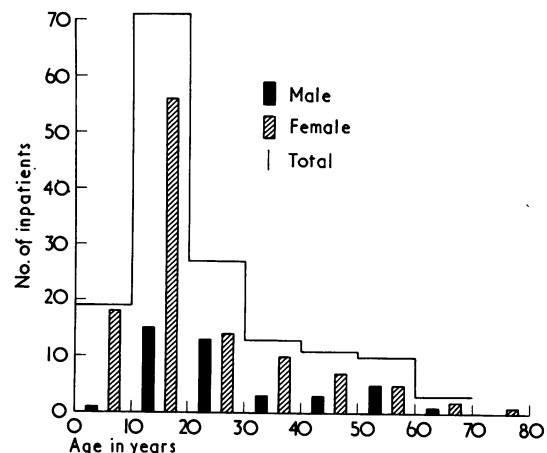


FIG. 1—Distribution of inpatients in 1971 and 1972 according to age and sex.

were female, and fig. 1 shows that teenage girls constituted one-third of all admissions. There was a clearly increased admission rate for both sexes during March to October, with a marked peak of female patients in July (fig. 2).

Thirty-six patients were professionally employed in their dealings with horses. These were predominantly stable lads, grooms, and jockeys, though farmers are also included in this figure.

Nature of Accident and Pattern of Injury

Most of the accidents (131) were to riders. Except for one girl who struck her head on a branch all were falls and the injury was due either to the fall itself or to being rolled on, kicked, or trodden on with the fall. Of the non-riders 13 patients were

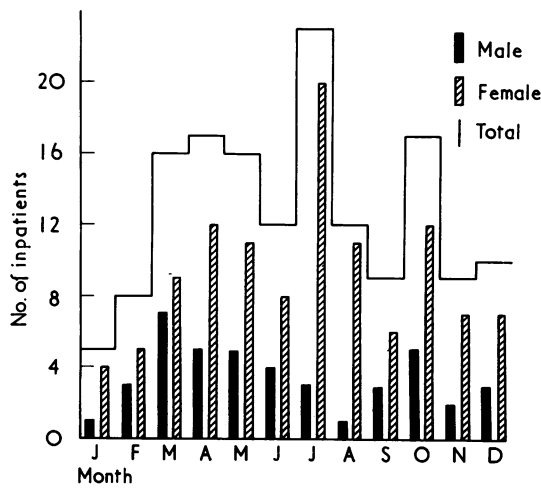


FIG. 2—Distribution of inpatients in 1971 and 1972 according to month of injury.

kicked by a horse and two trodden on. Only three patients were admitted after being knocked down; one of these was a cyclist and the other two were pedestrians.

HEAD

Altogether 101 patients were concussed; of these, 79 had no other injuries justifying admission and were discharged after one day's observation. Roughly one-third of all the patients (48) had a post-traumatic amnesia of less than half an hour and no other complicating features. Thirty-one patients can be regarded as having a moderately severe brain injury as the only reason for admission, and the other 22 patients with concussion would have been admitted on account of other injuries. Eleven patients had post-traumatic amnesia for 1 to 24 hours and seven had this for more than 24 hours.

There were 14 patients with fractures of the cranium, and four of these were compound. The one patient who died did so primarily because of the severity of her brain injury, though she also had a ruptured internal carotid artery and a tear of the pharynx. One case of extradural and one subdural haematoma required surgical evacuation.

Three patients developed post-traumatic epilepsy, all of whom were less than 13 years old. One 2-year-old, who was kicked, became hemiplegic and educationally subnormal as a result.

Four adult patients sustained fractures of the facial bones after being kicked, and one child after a fall. One middle-third facial fracture was associated with severe brain injury and required operation to the fracture. Both mandibular fractures required surgical fixation.

Information on the wearing of a riding hat is incomplete but at least 42 patients with concussion were wearing a hat and 28 were not. There is no clear association between the wearing of a riding hat and the severity of head injury (table I).

TABLE I—Relation between Severity of Head Injury and Wearing of Protective Headgear

	Duration of Post-traumatic Amnesia:					
	Less than 1 Hour		1-24 Hours		More than 24 Hours	
	Fracture	No Fracture	Fracture	No Fracture	Fracture	No Fracture
Hat worn ..	3	25	1	5	3	2
Hat not worn..	4	17	0	3	1	0

The body-zone distribution of injuries to horse riders is shown in table II.

TABLE II—Body-zone Distribution of Injuries to 131 Horse Riders

Head	67.2	Abdomen	3.1
Spine	3.9	Lower limb	10.8
Chest	8.5	Upper limb	23.9
Pelvis	5.4		

VERTEBRAE

Four patients sustained fractures of their spine after falls. A 71-year-old woman had a fracture of the odontoid and a Brown-Séquard syndrome. One 59-year-old woman had a fracture of the second and third cervical vertebrae with no neurological damage. Crush fractures of the bodies of the fifth and sixth thoracic and the second lumbar vertebrae occurred in a 7-year-old girl and a 27-year-old man respectively.

One 15-year-old girl had a neural arch fracture of the third and fourth cervical vertebrae, without neurological damage, after striking her head on a branch. Another patient had temporary brachial plexus palsy with a soft-tissue strain of the cervical and thoracic spine.

PELVIS

Seven patients had pelvic fractures. Of these one had haematuria from bladder contusion and one a severe vaginal tear. Four patients had pelvic ring disruptions, two from being rolled on and two after a direct fall. The two women with ring disruptions were still of child-bearing age. One other patient had bladder contusion and haematuria without fracture.

CHEST

Nine of the patients admitted had rib fractures and, of these, four had a pneumothorax. Two other patients had radiological evidence of lung contusion though no rib fracture was present. One patient was thought to have a haemopericardium, though this was not proved and recovery was spontaneous.

LEGS

Only one girl sustained a femoral shaft fracture (after being rolled on). Two patients sustained femoral neck fractures—a woman of 62 was knocked down and a 23-year-old man was injured in a fall.

Lower leg fractures were more common, with 12 patients admitted. Three of these fractures were compound.

Foot injuries consisted of one calcaneal fracture from a fall and a tarsal fracture and tarsometatarsal dislocation from being rolled on.

ARMS

There were two fractures of the humeral neck—one in a woman of 70 with associated rib fractures and pneumothorax, and the other in a child who required internal fixation of his epiphysis. The solitary humeral shaft fracture was a compound injury from a kick.

Three children had supracondylar fractures and, of these, two showed transient median nerve damage, one also having brachial artery obstruction. Three other children had fracture-dislocations of the elbow without neurovascular impairment.

Eight patients were admitted solely because of forearm fractures, of which two were compound. One of these had an ulnar artery transection and one a Galeazzi fracture with a fracture of the ulnar shaft. Six patients with head injuries had coincidental forearm fractures which would not have necessitated

admission. One child had transient impairment of median nerve conduction with a radial fracture.

Clavicle (8) and scapular (1) fractures were noted only in patients admitted with head injuries. The only hand injury seen was a phalangeal fracture requiring internal fixation.

Discussion

Nobody can doubt that horses are potentially dangerous. This survey shows that injuries produced by horses, predominantly while riding, are more common and more serious than generally imagined. Teenage girls are particularly frequent victims, though twice as many female as male patients were admitted to hospital irrespective of age. Though more girls than boys ride horses this suggests either that female riders have more accidents or that they are less able to withstand the forces exerted.

The increased incidence of accidents in July corresponds with the school holiday period, and it may be that there is insufficient supervision of casual child riders. That the fox-hunting season from September to March is conspicuously a period of fewer accidents implies that the better-trained and more experienced rider is less vulnerable.

Though the injuries sustained are generally less severe, and lower limb injuries are less common, the range of injuries is similar to those sustained by motor-cyclists.¹

Patients in this series who were wearing a riding hat do not seem to have fared better than those without, though extrapolation of figures available from motor-cycle injuries² suggests that correctly designed, fitted, and worn headgear would lessen the severity of injury. Despite an attempt by the British Standards Institution^{3 4} to improve the protection given by riding hats a confusing variety is available (fig. 3) and there are considerable social and economic obstacles to riders who wish their brains to be better protected. That many riders wear inadequate hats is highlighted by the only fatality in this series—a woman whose hat had fallen off before she struck the ground.

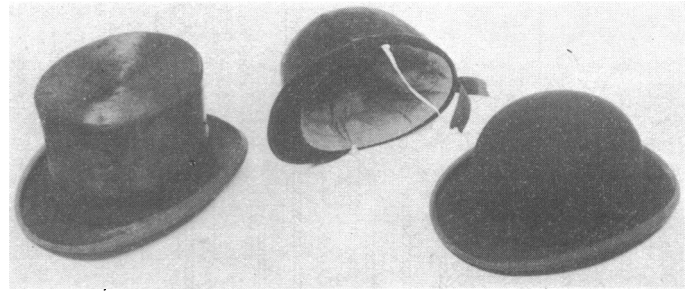


FIG. 3—Sample of inadequate headgear. Note elastic band serving as chin-strap on peaked cap and absence of retaining strap on the other two fashionable specimens.

It is over 200 years since Percivall Pott sustained a compound fracture of the tibia in a riding accident,⁵ but many riders still do not wear boots. The use of leather riding boots would lessen the incidence and severity of such injuries.

It is suggested that equestrian injuries are surprisingly common, may be serious, and can be minimized. Horses should be treated with more respect and young riders should be better supervised. A change in social attitudes towards protective headgear is desirable and more thought needs to be given to the design of socially acceptable protective hats.

I wish to thank the consultant surgeons of the Radcliffe Infirmary Accident Service for permission to review their patients.

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Medical History

Consumer Reaction: A Patient's View of Hospital Life in 1809

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On 6 July 1809 there was admitted as an inpatient to the Devon and Exeter Hospital in Exeter a 56-year-old minor actor named Joseph Wilde. Wilde had been one of the theatre company at Plymouth during the previous season, and one evening when playing in pantomime he had fallen and injured his knee. Application to local medical aid in Plymouth had proved unavailing, and after five months, perhaps because he was in danger of becoming a charge on the local poor rate, he went by

coach accompanied by Mr. Pear, the parish clerk, to the Devon and Exeter Hospital. There on one of the weekly admission days he was examined by the receiving members of the medical staff, and having been certified by one of the surgeons—Robert Patch—as likely to benefit from treatment, and having been approved by the lay members of the Weekly Board as a suitable object for the charity, he was admitted. In all, 15 patients were admitted on that day, and the diagnosis entered in the admission register opposite Wilde's name is simply "injury to knee."¹ As will appear later, it was an injury of some severity, and Wilde remained in hospital for a period of nine weeks. At the end of that time he was discharged with what is recorded in the register as "benefit."

Joseph Wilde was no ordinary early nineteenth century patient. Hospital patients of this period came almost entirely

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