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THE 1982 EPIDEMIC — ROLLER SKATING INJURIES

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ABSTRACT

A series of 100 roller skating injuries is presented. Roller skating injuries have been occurring at a higher rate than the previously reported skateboarding epidemic of 1977. The severity of injury has been lower, 32% fractures and dislocations occurring whilst roller skating, compared to 60% whilst skateboarding. In particular a striking reduction is seen in ankle fractures. Fifty questionnaires detailing method of injury were analysed.

INTRODUCTION

Low friction bearings and wheels used on skateboards have now been applied to roller skates and, along with attachment of the boot to the skates to produce a single item, the roller boot, these developments have led to a resurgence of the sport.

After Christmas 1981, the incidence and severity of some of the roller skating injuries attending the Accident Service of Southmead Hospital, Bristol prompted us to set up this survey. One hundred injuries were recorded in 3 months and 12 days. This is a higher incidence than the skateboard injury "epidemics" reported by Allum from Reading in 1977 (46 in 3 months), Nottingham (75 in 3 months) by Fyfe and Guion in 1977 and Sheffield (36 in 4 months) by Kemm in 1978.

The last 50 patients were asked to fill in a questionnaire, detailing the circumstances, cause and mechanism of the injury.

RESULTS

Clinical Data. 59 girls were involved compared to 41 boys, which is proportional to roller disco injuries (Wilkinson, 1982 and Dowey, 1982) but the opposite of skateboarding injuries (Fyfe and Guion, 1977 and Allum, 1977). The commonest age of the injured was 10-14 years (58%). Eight patients were over 20.

Five patients required admission to hospital. There were 32 fractures and dislocations. A large group were discharged after radiography (32%). 72% of injuries

TABLE I

A comparison of injuries incurred in roller skating, roller disco and skateboarding reported from six centres.

SPORT CITY NUMBERS	ROLLER SKATING	ROLLER DISCOTHEQUE			SKATEBOARDING		
	BRISTOL	BELFAST	DUNDONALD	NOTTINGHAM	READING	SHEFFIELD	
	100	158	128	75	46	36	
INJURY as % age of total							
Wrist and Forearm	52	39	66	36	35	25	
Ankle	4	14	—	23	—	—	
Head	7	10	7	9	9	8	
Other sites	37	37	27	32	56	67	

occurred to the upper limb, 15% to the lower limb, 8% to the head and face and 5% to the trunk (see Table I).

Soft tissue injury. The most serious soft tissue injury was that of a young girl (Fig. 1) whose hand had to be cut free from a chain-link fence, which had caught under the flexor tendons of her middle finger. However only two other patients required sutures. There were 18 soft tissue injuries to the wrist and 7 to the elbow. There were 7 patients with head injuries and one facial laceration but none required admission.

Fig. 1: Young girl's hand caught in chain-link fence.

Fractures (see Table II)

a) **Wrist.** There were 19 fractures of the distal end of the radius. Five were greenstick fractures and one required admission for reduction under general anaesthetic. One of these wrist fractures had an interesting radiograph (Fig. 2) which showed both a fresh fracture and early callus. On close questioning he was found to have fallen whilst roller skating two weeks before injuring the wrist. The callus seen on the radiograph suggests that it was broken at this stage but he did not come to the hospital.

b) **Elbow.** There were 2 fractures of the radial head and 7 soft tissue injuries. One of these fractures was sustained by the eldest patient, age 40, whilst out roller

Fig. 2: Radiograph of a wrist fracture.

skating with her children.

c) **Leg.** There was one spiral displaced fracture of the tibia and fibula which required skeletal traction followed by immobilisation in a long leg cast. There was one undisplaced fracture of the tibia and fibula.

d) **Ankle.** There were three ankle fractures and one sprained ankle. None of the ankle fractures were displaced.

QUESTIONNAIRE (Table III)

Fifty questionnaires were answered.

Sixty percent admitted to being learners. Only 6% were accompanied by their parents. Three were jumping at the time of injury and three were being towed, two behind bicycles and one by a friend. Not a single one was wearing protective equipment and only 4% felt this would have prevented their injury in any case.

DISCUSSION

There has been a recent epidemic of roller skating injuries in Bristol. This epidemic involves larger numbers than the previously reported skateboarding epidemic of 1977.

TABLE II

A comparison of sites of fracture sustained in roller skating, roller discotheque and skateboarding reported from six centres.

	ROLLER SKATING	ROLLER DISCOTHEQUE		SKATEBOARDING		
	BRISTOL	BELFAST	DUNDONALD	NOTTINGHAM	READING	SHEFFIELD
Forearm and Wrist	70%	60%	84%	46%	44%	42%
Ankle	10%	13%	—	22%	—	—
Tibia	6%	5%	—	2%	7%	11%
Other sites	14%	22%	16%	30%	53%	47%

TABLE III

Method of injury; Roller Skating (Bristol series).

APTITUDE	LEARNER	60%
SPEED	SLOW	34%
	MODERATE	60%
	FAST	4%
SLOPE	FLAT	76%
	DOWNHILL	22%
	TOWED	6%
	JUMPING	6%
SUPERVISION	ALONE	28%
	FRIENDS	64%
	PARENTS	6%*
PROTECTIVE EQUIPMENT		NIL*

It is interesting to contrast the two epidemics. More girls are being injured roller skating, which is the reverse of skateboarding. Two series of roller disco injuries also showed a higher percentage of girls injured which may be expected in a sport which is a form of dance. More adults are being injured (8 patients were aged over 20 years) compared with only one adult in the series of skateboarding injuries from Nottingham (Fyfe and Guion, 1977).

The severity of injuries is less, 32% fractures and

dislocations roller skating, compared with 60% fractures from skateboarding. The number of injuries to the ankle is far less for roller skating, 4% compared to skateboarding at 23%, which is probably due to the good ankle support of the roller boot, and the fact that skateboarders when in trouble jumped off risking more injury to their ankles.

It was of interest that not one patient was wearing protective equipment and the majority felt that it would not have saved them from injury. Most were with friends at the time of injury and only a few were under parental supervision. Many of these injuries involved bumping into a friend or being pushed by a friend.

The skateboarding craze did not last very long but roller skating has been with us for over fifty years and will probably be a much more durable form of outdoor sport for children. Any form of sport which involves travelling at speed on wheels will produce injuries. It is difficult to see how the injuries, which are mainly to the wrist and caused by indirect force, a fall on the outstretched hand, could be minimised by protective devices such as wrist splints. However it is reassuring that although roller skating is causing more injuries than skateboarding, they are of less severity.

ACKNOWLEDGEMENTS

I am grateful to the Accident Service receptionists at Southmead Hospital for their help in recording cases and to Mr. H. E. D. Griffiths and Mr. C. E. Ackroyd, Orthopaedic consultants for allowing me to report on their patients.

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