The kick with the stick

A Exadaktylos, S Eggli, H Zimmermann

Abstract

Objective—To investigate the incidence and type of severe microscoter related injuries in adults.

Method—Data were collected between January and September 2000 from the University Hospital Berne, the only referral centre for major trauma in that city, using the software package Qualicare, which connects clinical data with categorised keywords, allowing the immediate localisation of patient groups with defined diagnosis or other clinical information.

Results—Only 0.2% of the patients treated had suffered a microscoter accident. There were five head injuries: three facial lacerations, one fractured mandible, and one cerebral concussion. One patient showed clinical signs of a cervical whiplash injury without radiological findings. There were also two cases of finger laceration and two of muscular contusions of the lower extremities.

Conclusions—Although only a small proportion of the trauma cases were the result of riding microscoters, a system of injury surveillance should be started. Furthermore, protective gear should be worn particularly when microscoters are ridden in the street.

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In June 1999, a new sports and leisure vehicle was introduced in Switzerland and consecutively across Europe. According to the product's manufacturers, more than 150 000 "microscoters" were sold in the first year alone on the Swiss market, which represents more than 10% of the population between 5 and 30 years of age.

The microscoter is a multiwheeled (two to four wheels) vehicle with a steering fork, and is propelled by pushing or kicking with one foot. The kickboard miniscoter or microscoter is based on the scooter of our childhood, but has been modified to include smaller wheels, lighter materials (a total weight of about 2 kg), and a collapsible design, making it easy to carry on the back.

Microscoters are used for recreation, sport, and transportation in urban heavy traffic areas, and are popular not only with schoolchildren but also with business people. They have been officially introduced by the radiology department at our hospital to help on call radiologists travel more quickly through the hospital corridors.

In contrast with skateboarding¹ and inline skating,² there currently exists no information

about injury patterns related to the use of microscoters, except single reports of lethal accidents such as the case of a nine year old child knocked down by a taxi in Liverpool. The aim of this study was to investigate whether there were any severe microscoter related injuries in our adult patients and to describe the incidence and type.

Materials and methods

The University Hospital trauma unit is the only referral centre for major trauma in Berne, the capital of Switzerland. It treats all severely injured patients with head, spinal, and pelvic injuries. The children's hospital has a separate emergency unit. Data were collected using the newly developed clinical software package Qualicare (Qualidoc AG, Trimbach, Switzerland, www.qualidoc.ch). Qualicare is a "relational database", which connects clinical data with categorised keywords, allowing the immediate localisation of patient groups with defined diagnosis or other clinical information.

The microscoter is a light weight (2.76 kg), compact vehicle made of aircraft aluminium; it incorporates a unique folding mechanism and a built in brake system. The high speed that can be reached over a short period could be expected to lead to injuries.

However, of the 5400 patients treated in our emergency room after various kinds of accident between January and September 2000, only 10 had been riding microscoters. All patients reported the same mechanism leading to the accident: loss of control while trying to slow down or to stop. We saw five men and five women with a mean age of 29.9 years (range 16-40). No patient was wearing special wrist protectors or a helmet at the time of the accident.

Results

Only 0.2% of the patients treated during the investigation period suffered a microscoter accident. The main site of trauma was the head, with five injuries. Three of these patients had facial lacerations, one showed a fractured mandible, and another had a cerebral concussion without any findings of intracranial lesion on the computed tomogram. One patient showed clinical signs of a cervical whiplash injury without radiological findings. In two patients a finger laceration had to be sutured, and two patients were diagnosed with muscular contusions of the lower extremities. All patients except the one with the broken jaw were able to leave hospital the same day.

Discussion

Compared with other trend sports such as inline skating³⁻⁹ and skateboarding,^{1 10-13} we have not seen any severe injuries during the

Department of
Trauma and
Emergency Medicine,
University Hospital
Bern, Inselspital, 3010
Berne, Switzerland
A Exadaktylos
S Eggli
H Zimmermann

Correspondence to:
Dr Exadaktylos
exaris@hotmail.com

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Figure 1 A microscooter rider demonstrating how the hands would be holding the grips during a fall.

first summer kickboard season, although there have been reports from other countries of lethal accidents, such as the case of the nine year old boy who died after being knocked down by a car.

In our patient population, nine out of 10 adult patients showed only minor injuries and could leave hospital the same day. Injuries to the face and head were predominant, accounting for five out of 10 cases. The high incidence of craniofacial trauma can be explained by the injury mechanism. All patients with face and head trauma reported a fall over the steering fork after pushing the brake. Because the hands are holding the grips, they cannot be used to protect the face in a fall (fig 1). This limitation has the benefit that microscooter riders are unlikely to sustain radiocarpal fractures such as those sustained from skateboarding and inline skating accidents, in which arms and hands are stretched out to absorb the impact of the fall.

Although we had no severe head injuries in our population, we recommend that protective gear such as bicycle helmets should be worn, especially if the microscooter is used in the streets.

Injury surveillance will be important to review the impact of microscooters. We suggest that all hospitals in Europe should report even single cases of severe microscooter accidents, especially those involving children, in order to prevent lethal accidents in the future. In the United Kingdom, the Leisure Accident Surveillance System and the Home Accidents Surveillance System are published by the Department of Trade and Industry.

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