

Talar Fractures in Children: A Possible Injury After Go-Karting Accidents



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ABSTRACT

Go-karting is an increasingly popular high-energy sport enjoyed by both children and adults. Because of the speeds involved, accidents involving go-karts can lead to serious injury. We describe 6 talar fractures in 4 patients that resulted from go-karting accidents. Talar fractures can cause severe damage to the tibiotalar joint, talocalcaneal or subtalar joint, and the talonavicular joint. This damage can, in turn, lead to complications such as avascular necrosis, arthritis, nonunion, delayed union, and neuropraxia, which have the potential to cause long-term disability in a child.

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Go-karting, an increasingly popular leisure activity, is a high-speed sport enjoyed by both children and adults. Drivers sit in a relatively unprotected environment, and the position of the legs in a go-kart is usually fixed, with braces to keep the feet in place. In the event of a collision, the lower extremities cannot be averted and are highly likely to absorb a major part of the transferred energy. In The Netherlands, although most go-karting alleys have implemented some rules or restrictions for children, such as the use of higher seats, helmets, and/or neck and back protectors, no official regulations are in place to protect children in go-karts. Also, most go-karting alleys do have vehicles in which the gas and brake throttles can be adapted to the length of a child's leg.

Few reports have been published on go-kart-related injuries. Eker et al (1) found that in The Netherlands, approximately 600 individuals annually required hospital-based evaluations and treatment after a go-karting accident. They identified 3 types of trauma involved in go-kart injuries: cuts, contusions, and fractures caused by direct collision accidents; blunt injury abdominal and thoracic injuries arising from high-energy frontal collisions; and acceleration/deceleration injuries causing hyperextension of the cervical spine (1,2).

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Fig. 1. Computed tomography scan of the right foot of patient 1 showing a nondislocated fracture of the dorsolateral talar neck.

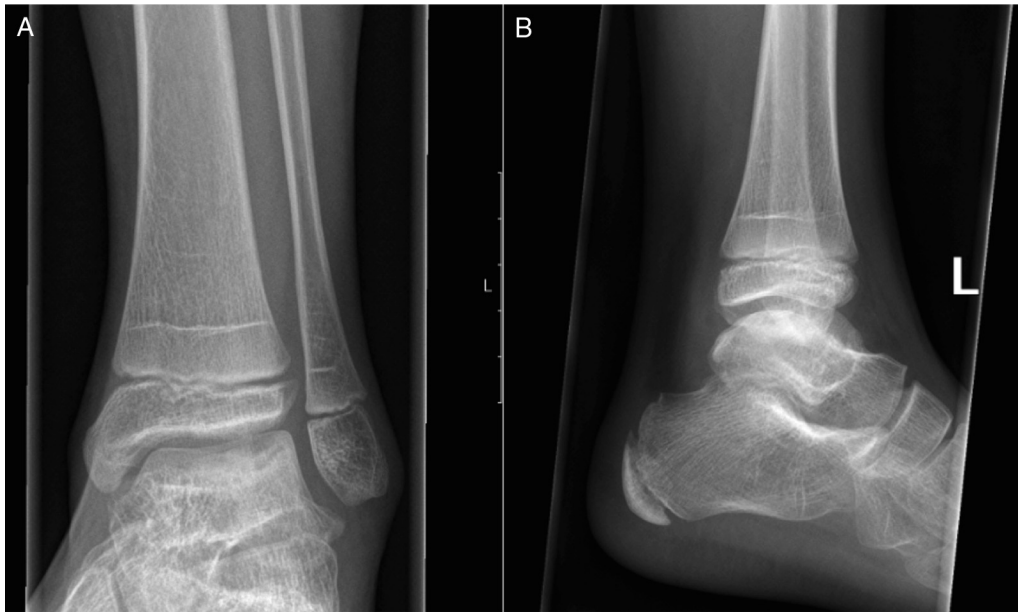


Fig. 2. (A) Anterior (AP) and (B) lateral view standard radiographs of the left ankle of patient 1 at the 18-month follow-up examination.

Go-karting has become increasingly popular among children. In the present report, we describe 4 cases of lower extremity injuries in children after go-karting accidents. Given the described trauma and related injuries, whether this high-speed type of sport is an appropriate leisure activity for inexperienced and vulnerable children should be reconsidered.

Case Reports

Patient 1

A 9-year-old female was driving a go-kart, lost control, and crashed into a tire stack. Her legs were trapped in the braces attached to the

go-kart; thus, the patient was launched forward and then pulled back into the seat of the go-kart. The patient was reported to have been unconscious for a few seconds; also, on the way to the hospital, she was drowsy. In the emergency department (ED) the patient was hemodynamically stable, and she scored 14 on the Glasgow coma scale. The patient vomited once in the ED, but her primary complaint was pain in both feet with palpation of the metatarsal bones and the medial and lateral malleoli.

Bilateral radiographs showed irregularities in the tali and an avulsion fracture of the left medial malleolus. Computed tomography (CT) scanning showed bilateral nondislocated talar fractures of the dorsolateral talar neck. The tibiotalar joints (upper jump joint), talocalcaneal or subtalar joints (lower jump joint), and the

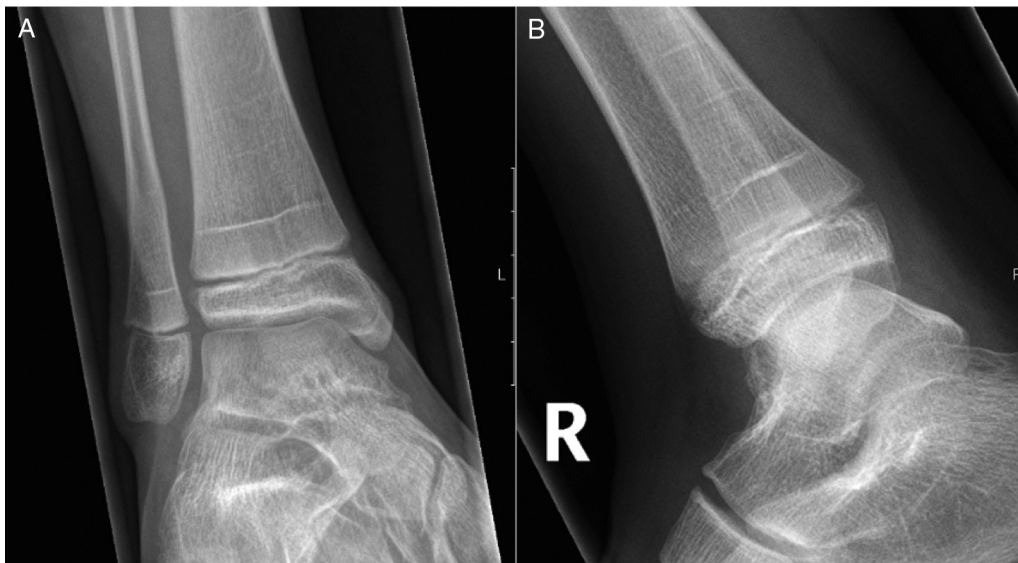


Fig. 3. (A) AP and (B) lateral view radiographs of the right ankle of patient 1 at the 18-month follow-up examination.

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