amputations even less so.¹ Although it has been reported that the most frequently injured part of the lower limb for skiers is the knee, no case of amputation has yet been reported among 13,381 lower extremity skiing injuries.² We recently had to face a dramatic avalanche accident resulting in complete traumatic leg amputation, which is the first case that we are aware of described to date.

A 43-year-old man was caught in an avalanche while ski touring on a frequently used itinerary. The slope was 40 to 45 degrees. He deployed his avalanche airbag by pulling its handle. He sustained only partial burial, and his companions were able to raise the alarm using a cell phone. A rescue helicopter winched a rescue doctor directly on site. The victim was conscious and reported pain in both legs, estimated at 8 out of 10. Primary survey revealed a complete amputation of the right leg and mild bleeding and an obvious fracture of the left. The patient's heart rate was 67 beats/min and the respiratory rate was 17 breaths/min. Oxygen was provided through a nonrebreather mask, and hemoglobin saturation was measured at 99%. Fentanyl 100 micrograms and ketamine 20 mg were administered intravenously, and a tourniquet was placed on the right mid-thigh. The patient was immobilized on a spine board with a cervical collar and a left lower limb splint. He was then winched into the helicopter and airlifted to a hospital.

He remained hemodynamically stable on admission, with a pH of 7.29, lactate of 3.3 mmol/L, and hemoglobin of 133 g/L. A radiological survey revealed a complete open avulsion of the lower leg at the right knee and open left tibial and fibular fractures. The patient was taken to the operating room for revision of the amputation stump, and a modified Grritti-Stokes amputation was performed while the fractured left tibia was stabilized by an external fixator. The postoperative course was uneventful aside from moderate posttraumatic rhabdomyolysis with peak creatinine kinase levels at 11,748 U/L, without consequent acute renal failure.

After closed reduction and internal fixation of the left lower limb fractures, the patient was fitted with a molded right leg prosthesis and underwent multidisciplinary rehabilitation. At 1-year follow-up, full healing had occurred, and he had resumed his professional as well as his prior sport activities. He reported being satisfied with his quality of life and gave consent for his case to be used in a publication.

Although the cause of death of avalanche victims is usually asphyxiation after complete burial,³ most victims who survive experience traumatic injuries.^{4,5} Lower limb injuries predominate over upper limb injuries and occur in about one-third of avalanche victims.⁵ According to a case series of 82 avalanche victims admitted alive to a hospital, 13% of the patients had lower limb fractures.⁵

The site of the accident described was completely snow-covered and free of trees, rocks, or obstacles. We therefore presume that a twisting mechanism of the leg was responsible for its avulsion.

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Mathieu Pasquier, MD
Emergency Service
Lausanne, Switzerland

Christos Karatzios, MD
Division of Physical and Rehabilitation Medicine
Orthopedic Hospital
Lausanne, Switzerland

Olivier Borens, MD
Division of Traumatology, University Hospital Centre
Lausanne, Switzerland

Fabrice Coppex, MD
GRIMM, Air-Glacières, Maison FXB du Sauvetage
Sion, Switzerland

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Channel 7-7 PMR: A Radio Communication Initiative in Mountain-Related Emergencies in Spain

To the Editor:

During recent decades, mountains have received a growing flow of visitors, even becoming major tourist

attractions in many parts of the world.^{1,2} Paralleling this increase in the number of people who go to mountains as a recreational activity, we have seen a spectacular increase in the incidence of accidents in the natural environment in Spain,³ a consequence described by some experts as a true public health problem.⁴

Emergency care in the mountains is a challenge for rescue teams because of the difficulty in accessing and communicating with the injured party, resulting from the topography of the terrain. In view of the possibility of an incident and to facilitate communication and requests for help from emergency services, private individuals, or nearby groups, the #Canal77PMR initiative has been rolled out across Spain since 2015 by some mountaineering clubs, nongovernmental organizations, and individual people (sportsmen and radio amateurs). This initiative encourages individuals engaging in outdoor activities in natural areas to carry their own personal mobile radios (PMRs) set to listening mode on channel 7 subchannel 7 (446.08125 MHz; CTCSS Tone Frequency 85.4 Hz).⁵

PMRs are transceivers that operate in the ultra-high-frequency band and are authorized for amateur use without a license in most European Union countries. The power of these radios is limited to 0.5 W; hence, their range is no more than 10 km in ideal conditions (without physical obstacles between transmitter and receiver).

In addition to mobile phones (or as a substitute, under circumstances in which phones do not work), the use of PMR transceivers on channel 7 subchannel 7 facilitates coordination among different members of the same group of outdoor adventurers (eg, climbers, hikers, skiers) and could allow communication with other nearby groups that might need or provide help, information, or assistance. Furthermore, PMRs could be a direct channel of communication with rescue services while en route to the scene of an incident.

As they have become cheaper and more widely available, PMR transceivers have become more popular for personal and recreational purposes. Beyond this, however, their use as a safety measure among people or rescue team staff should be encouraged for all activities in the mountains and other isolated areas. The more PMRs carried in listening mode on channel 7 subchannel 7, the greater the likelihood that people in distress will receive prompt assistance from other groups nearby or rescue teams when far from the usual reach of traditional emergency services.

Sendoa Ballesteros-Peña, RN, MPH, PhD
Emergency Department, Hospital of Basurto
Bilbao, Spain
Medicine and Nursing Faculty
University of the Basque Country
Leioa, Spain

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The “Newbie” Syndrome

To the Editor:

“Unfitness may lead to injury.” Might this be a new mandatory sign for “new age” bouldering gyms? Or, to put it into a more scientific context, are the data on indoor bouldering injuries still up to date, or do we need to reevaluate the injury rate and severity and add the “newbie” syndrome?

Many studies have been conducted during the last decade on climbing injuries—their grading, incidence, and variation in between certain disciplines.^{1–5} Most of the newer studies were consistent with the fact that overall climbing injury incidence was minor, with most injuries being of minor grade, but fatalities still happen in all disciplines.^{1–3,6} Of the different climbing disciplines, indoor climbing (lead and bouldering) had the lowest incidence of injury (0.02–0.08 injuries per 1000 hours of sports performance) with most being of minor severity.^{1,2,7,8} In a prospective analysis of more than half a million entries to a large indoor climbing and bouldering gym, we found an injury rate of 0.02 per 1000 hours with 15 being International Climbing and Mountaineering Federation (UIAA) injury severity grade 2, 13 UIAA 3, and 2 UIAA 4.⁷ Acute injuries happened in 6 cases while bouldering, in 16 cases while lead climbing, in 7 cases while top roping, and in 1 case as a third person (not climbing or belaying) while watching another climber.⁷ No injuries of a higher UIAA grade were reported, and no fatalities occurred in this study. Furthermore, in analyzing our patients with climbing injuries between 2009 and 2012, we found out of 911 injuries, only 13 were grade 3 injuries, and there were no higher grade injuries.⁹ These findings of mostly minor grade injuries in indoor climbing are consistent with the literature.^{1,2,5,7,8,10}

In contradiction, over the last 5 years we have seen a clear shift toward more serious injuries caused by indoor