Alpine Skiing Injuries
Ulnar Collateral Ligament Sprains and Tibia Fractures
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Vol. 4(1) | DOI: https://doi.org/10.13942/muse_e41-1856
MacEwan University Student eJournal | © 2020 under CC BY-NC | ISSN 2369-5617

Introduction

Skiing is an exciting winter sport; however, it is defined as a high-risk sport for significant injuries. Focusing on upper body and lower body injury, common traumas to the body in downhill skiers are sprains of the ulnar collateral ligament (UCL), which is part of the thumb joint, and tibia fractures. The analysis and research will outline the following of each injury:

- Mechanism of injury
- Treatment
- Rehabilitation
- Prevention

Mechanism Of Injury

Tibia fractures
- Boot bindings not releasing during a fall
- Falling off the snow surface
- Direct trauma to the tibia

UCL Sprains
- Falling on an outstretched hand or while gripping a ski pole
- The ski pole forces the thumb to deviate radially causing hyperextension and hyperabduction which stretches and/or tears the UCL
- Acute, excessive force can cause an avulsion fracture

UCL Fractures
- Open and closed fractures are commonly treated by surgery
- A rod and nails are placed into tibia to stabilize the injury
- Partial (Grade I and II) tears are usually treated by immobilization in a thumb spica cast or brace
- In a complete rupture, early surgery, usually with suture anchors, is recommended
- In the case of a complete rupture, a Stener lesion should be ruled out before surgery is performed

Tibia Fractures
- Proper fitting boots and bindings
- Elimination of risk factors
- Avoiding alcohol and other impairing substances
- Avoid risky behavior
- Awareness Training

Risk Factors
- External
  - Snow surface and trial complexity/difficulty
  - Climate factors
  - Presence of other skiers
  - Equipment
- Internal
  - Motor abilities
  - Self reported level of experience
  - Fatigue level
  - Gender
  - Age

Prevention

Tibia Fractures
- Avoid risky behavior
- Increase muscle strength
- Discarding poles during a fall reduces the risk
- Wear a brace or splint if previously injured
- Reduce pain and normalize movement
- Normalizing walking without crutches and balance
- Increase endurance of muscle

UCL Sprains
- Initial rehabilitation is establishing range of motion while in a cast
- Progression of motion from passive, active to resistive phases (i.e. rebuilding pinch proprioception)
- Strengthening and sport specific movement

References