

Tibial plateau fractures in snow sports

Joan Freitas and Aleix Vidal

Baqueira Beret Medical Center, Pyrenees, Spain

Orthopedic Surgery, Centro Medico Teknon, Barcelona, Spain

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Introduction:

Distal and midshaft tibial fractures historically have been representative for downhill ski injuries. However, after new bindings and boots technologies have evolved, proximal and tibial plateau fractures have become also more frequent. In the present study we analyse the incidence of proximal tibial fractures (Tibial Plateau Fractures -TPF) during the past 9 consecutive ski seasons. Comparing group age and gender distribution, TPF were more frequently seen in female injured population. For both skiers and snowboarders proximal tibia fractures were more commonly seen in older population.

Methods:

From 2011 throughout 2019 ski seasons, we have recorded 493 Tibia Plateau Fractures (TPF). Shatzker classification for TPF has been used to compare high and low energy fractures. Gender, age group distribution, expertise level and snow conditions were analysed. All injured population seen in our Medical Center during the same period has been considered our control group to evaluate incidence of gender and age group for TPF.

Results:

During 2010/2011 to 2018/2019 ski seasons we have seen 8.499 knee injuries at our Medical Center in a ski resort. 493 (5.8% of total knee injuries) were diagnosed as Tibia Plateau Fractures. 73 (14.8% of total TPF) fractures were classified as Shatzker grade I, 79 (16.02%) as Shatzker grade II, 182 (36.91%) as Shatzker grade III, 50 (10.14%) as Shatzker grade IV, 40 (8.11%) Shatzker grade V and 69 (13.99%) Shatzker grade VI. Total TPF represented 1% of injured population and of all knee injuries. Gender distribution for all injured population was 5.137 (60.44%) males and 3.362 (39.56%) females. Gender distribution for TPF was 156 males (37%) and 337 females (62%). Mean age of all groups was 48 years.

Conclusion:

- Tibia Plateau Fractures represented 1% of all fractures seen in our medical Center and 6% (5.8%) of all knee injuries.
- According to Shatzker classification Low energy fractures were more frequently seen (75%) compared to High energy fractures (24%).
- Females were more frequently involved (62%) compared to males (37%).
- Fracture rate increased with age: from 3% for age group 0 to 15 years, compared to 14.9% in the agegroup older than 50 years.

Discussion:

Our results might help to lead further investigation on the risk factors, etiology and prevention of Tibial Plateau Fractures in older population, due to higher injury rates and further complications derived from this type of lesion, that will unavoidably, decrease quality of life.