Incidence and Risk Factors for High Ankle Sprains (Tibiofibular Syndesmosis Injuries) in Intercollegiate Football

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Introduction
High ankle sprains, or injuries to the tibiofibular syndesmosis, are common in elite football players (1). These injuries differ from the more typical inversion ankle sprain in that they more often result in significant time lost from participation, are more likely to require immediate surgical decision-making, and are predictive of long-term ankle dysfunction (2). However, the present paucity of clinical data on high ankle sprains has resulted in a lack of clear guidelines available to the treating physician to aid in assessing injury severity and optimizing management decisions and prognosis (e.g., operative treatment, return to play timing, etc.). The purpose of this investigation was to determine the incidence and epidemiology of high ankle sprains (i.e., ligamentous injuries to the distal tibiofibular syndesmosis) in National Collegiate Athletic Association (NCAA) football players and to identify risk factors for these injuries.

Methods
We examined data from the NCAA’s Injury Surveillance System (ISS) for five football seasons (2004-2005 through 2008-2009), including all preseason, regular season and postseason practice and competition data. Injury rate (number of injuries divided by number of Athlete Exposures [A-Es]) was computed for practice and game competition exposures for partial and complete syndesmosis injuries. Pair-wise two-sample tests of equality of proportions were used to estimate risk factors.

Results
The overall incidence of high ankle sprains in NCAA football players was 0.24 per 1000 A-Es. Players were 13.9 times more likely to sustain the injury during games compared to practice (rate ratio of 13.94 [11.90, 16.34]). Complete syndesmosis injuries resulted in significantly greater time lost from participation (31.26 days, range 3-168 days) compared to partial syndesmosis injuries (15.76 days, range 1-172 days). Fewer than 3% of syndesmosis injuries resulted in surgical intervention. There was a significantly higher injury incidence on artificial “fill” surfaces (i.e. third generation artificial surfaces) compared to natural grass (p < 0.01). The vast majority of injuries occurred during contact with another player (75.2%), and just over half (51.7%) of injuries occurred during running plays (Figure 1). Running backs, defensive tackles, and linebackers were the most common positions suffering high ankle sprains.
Conclusion