

Prevalence and Characteristics of Osteochondritis Dissecans of the Humeral Capitellum Among Young Baseball Players

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Summary:

This is a first report of large-scale prevalence of osteochondritis dissecans of the humeral capitellum among young baseball players assessment of characteristics.

Abstract:

Introduction

Osteochondritis dissecans of the humeral capitellum (OCD) is a condition that occurs in young athletes who participate in sports that place a large amount of stress on the humeral capitellum. Baseball is one of the high-risk sports, which induces OCD. Many players start playing baseball during elementary school. Recently, medical check-ups for OCD in young baseball players utilizing ultrasonography are becoming more popular. The prevalence and clinical characteristics of OCD among young baseball players are unknown. The aim of this study was to investigate the frequency and clinical characteristics of OCD among young baseball players.

Methods

The subjects were 4099 young baseball players from 7 to 17 years (mean, 13.2 years) who participated in medical check-ups for OCD. All players completed a questionnaire asking about present and past elbow pain when throwing, their current position, the starting age of playing baseball, and the duration of competitive play. The elbow of each subject's throwing arm was assessed using ultrasonography. Subjects with abnormal results on ultrasonography were further examined through radiographic study. OCD lesions were classified into stages based on radiographic results. We compare the differences of demographic data between OCD players and non-OCD players.

Results

OCD was detected in 119 (2.9%) of 4099 elbows by ultrasonography. One hundred-five of the 119 OCD players underwent further radiographic examination. Twelve of them (11.4%) were stage S (superficial stage, Figure), 21 (20.0%) were stage I (radiolucent stage), 35 (33.3%) were stage II (fragmentation stage), and 11 (10.5%) were stage III (loose body stage). And additional 11 (10.5%) players were stage IV (residual stage), and 15 (14.3%) were stage V (postoperative stage). There was no significant difference on the starting age of playing baseball ($p = 0.085$), the duration of competitive play ($p = 0.998$) and among positions ($p = 0.337$). They also had present ($p = 0.001$) and past elbow pain ($p < 0.001$) compared to non-OCD players, however sixty-eight OCD players in early stage (S, I and II, before loose body stage) had no significant differences.

Discussion

The prevalence of OCD was 2.9% among young baseball players. Players with OCD had present elbow pain, but players in early stage do not have significant present elbow pain compared to non-OCD players. Medical check-ups of young baseball players utilizing ultrasonography are useful for detecting OCD with no associated elbow pain.