研究業績　英文表記

和文	
表題	高校野球選手における肩甲骨の位置と肩関節可動域の関係
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英文	
Title	The Relationship between Scapular Position and Glenohumeral Rotational Range of Motion in High School Baseball Players
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Abstract	Background Past research indicated that scapular malposition is related to the glenohumeral internal rotation deficit (GIRD). However, there is no research examining the effect of throwing-related pain on this relationship. This study investigated the relationship between scapular position and range of motion (ROM) and compared the difference in this relationship between with and without throwing-related pain. Methods Forty male baseball players in high school were recruited for this study. The existence and degree of throwing-related pain were obtained from a questionnaire. Participants were divided into two groups according to the presence or absence of the pain. Glenohumeral internal and external rotation ROM (ABIR and ABER, respectively) were measured using a digital inclinometer. The pectoralis minor muscle length was measured using a vernier calliper and scapula index, which indicated the scapular position, measured using a measuring tape. All these measurements were taken on both dominant and nondominant sides. The GIRD and total motion arc (TMA) deficit were calculated from the ROM measurements. Groups were compared using a mixed-model analysis of variance. Results There was a significant interaction between group and ABER dominance. Other variables were not seen as the interaction effect. There was a significant positive correlation between the scapula index and TMA ($r = 0.47$, $p = 0.02$) and a negative correlation between the scapula index and GIRD ($r = -0.65$, $p < 0.01$) in the dominant side of the pain group. Additionally, in the nondominant side of the pain group, the scapula index and ABER were significantly correlated ($r = 0.43$, $p = 0.04$). Conclusion The results of this study indicate that the scapular position is associated with the glenohumeral ROM in high school baseball players. Additionally, this study demonstrated that the scapular internally rotated position was correlated with the GIRD and TMA deficit in high school baseball players who had throwing-related pain. On the other hand, the scapular externally rotated position was correlated with increased ABER, mainly in the pain-free baseball players or on the nondominant side. These results indicated that the scapular position might affect the glenohumeral rotational ROM in high school baseball players.
keyword	Scapular PositionGlenohumeral Range of MotionHigh SchoolBaseball Players

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