

## Analysis of Throwing Motion and Shoulder Stability in Throwing Plane

Nobuhara Hospital and Institute of Biomechanics

Katsuya Nobuhara, MD

Throwing motion can easily be observed by using VTR. However, previous methods make it impossible to obtain the data concerning the most important moment of releasing a ball. To solve this problem two units of NAC Colour High Speed Video were used. The system was invented to process these data using PEAS Personal Image Analysis System and; throwing motion was subjected to a three-dimensional study and analysis. Data of profession baseball pitcher that taken in the best and worse condition was analysed

Shoulder instability in the throwing plan was also analysed. Since 1987. 151patients have the state of combined tear of the infraspinatus tendon and RI lesion were treated at Nobuhara Hospital.

Subject is mainly baseball and volleyball players. The age ranges from 11 to 36years (average, 22). The engaged period to sports distributes 3 to 15 years (average. 9.7) Complaints is severe tender at the RI and at the insertion of the infraspinatus tendon (ISP), and characteristic motion pain with the arm in the throwing plan. Arthrography shows protrusion of the contrast medium into the RI and leaking to the subacromial bursa through the perforated infraspinatus tendon. Motion pain occurs mainly in the rotation. 81% compare to in the elevation motion in 19% Investigation of the anterior-posterior translation of the humeral head to the glenoid during throwing motion was done. The center of the humeral head trends to translate eccentrically in this pathologic state. This fact tells when RI lesion exists. its anterior instability may arise a significant translation of the humeral head to the glenoid during throwing. as a result, a tear of the infraspinatus tendon occurs. However, opposite may occur as well.