028 Clinical results of arthroscopic repair for incomplete rotator cuff tear
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To clear the merits of arthroscopic surgery, we investigated the clinical outcome of the arthroscopic repair on incomplete rotator cuff tears. Thirteen shoulders with incomplete rotator cuff tears were treated by arthroscopy from 2000 to 2005. There were 9 males and 4 females with an average age of 62.7 years old. The pre and post-operative results according to the shoulder evaluation sheet of the Japanese Orthopaedic Association (JOA score) were evaluated. Each average postoperative JOA score improved compared with the preoperative JOA score. The clinical outcome of our arthroscopic repair surgery for incomplete rotator cuff tears was excellent.

033 Axillary nerve lesion in throwing athletes

We studied 118 throwing shoulder cases to investigate occurrence of axillary nerve lesion. A diagnosis of axillary nerve lesion was made, when the patient had hypesthesia in the distribution of axillary nerve and tenderness of the quadrilateral space or the axillary fossa. Axillary nerve lesions were observed in 43 of 118 cases (36.4%). Bennett lesions were detected in 25 cases. In all of patients‘ age, shoulder ROM and incidence of Bennett lesions, there were no statistical differences between the positive and the negative axillary nerve lesion groups. Axillary nerve lesions were supposed to be relatively common problems in throwing athletes.

035 The characteristic of the trunk rotation in the throwing athletes
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We studied 89 baseball players with a mean age of 14.7 years to show that the physical change in the growing period has a great influence on the trunk rotation in the throwing athletes. In 49 cases below 15 years old before and during the growth spurt, only 3 were exhibited the restriction of the trunk rotation to the throwing side (6.1%), while in 40 cases above 15 years old after it, 15 cases were exhibited it (37.5%) \( P < 0.05 \). We concluded that in throwing athletes after the growing spurt, the trunk rotation to the throwing side tended to be restricted.

036 Influence of posterior capsular tightness on anterior instability and pathogenesis of several lesions in throwing injury of the shoulder
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The correlation of anterior instability, SLAP lesion and rotator cuff tear with the posterior capsular tightness in throwing shoulder injury was investigated. As 54 throwing athletes were divided into 2 groups according to the presence of posterior capsular tightness, 38 were regarded as positive. The frequency of anterior instability in tightness group was higher. Anterior subtype of SLAP lesion was solely seen in tightness group, and the tear in the anterior aspect of the supraspinatus tendon was more frequently seen in tightness group. Characteristic site of SLAP lesion and rotator cuff tear might be induced by posterior capsular tightness.

060 The clinical results of nontraumatic shoulder instability
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The purpose of this study is to evaluate the clinical results of nontraumatic instability. 44 shoulders of 43 cases with nontraumatic instability were followed up more than 1 year. The JSS Shoulder Instability Score was used for the clinical evaluation. We performed the conservative treatment using the brace originally designed. The cases that revealed the instability for the limited direction and experienced the daily life and sports disorders were the indication of the operative treatment. The clinical results improved from 63.1 to 83.4 points.

075 Clinical results of arthroscopic rotator cuff repair for rotator cuff tear
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We evaluated the clinical results after arthroscopic rotator cuff repair (ARCR) for rotator cuff tears. Twenty-six shoulders were treated and followed-up for more than 6 months postoperatively. The average age at operation was 58.2 years old and the mean follow-up period was 11.9 months. We arthroscopically sutured the torn cuff to the greater tuberosity using suture anchors. According to the JOA score, the average total score increased from 61.9 points to 92.9 points. The average shoulder abduction strength increased from 2.97kg to 5.23kg. Postoperative MRI showed 22.7% of re-torn cuff. The clinical outcome of the ARCR was almost satisfactory.

078 Arthroscopic versus mini-open rotator cuff repair: Outcome analysis by randomized study
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In this study, 50 cases of small to large rotator cuff tears (mean age 60.5 years) were treated by either arthroscopic (ARCR) (25 cases) or mini-open rotator cuff repair (MOCR) (25 cases). At a mean follow-up of 12 months, JOA scores improved from 65.7 points preoperatively to 90.6 points postoperatively in ARCR and from 67.3 points preoperatively to 90.8 points in MOCR without statistical differences in total shoulder score, pain, strength and
function. The present study shows that MOCR for small to large rotator cuff tears had equal clinical results to MOCR.

085 MRI findings after open tenorrhaphy of torn rotator cuff
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Purpose: To investigate the changes of MRI findings of rotator cuff tear after open tenorrhaphy. Cases and Methods: MRI of the shoulders were taken at from 6 to 12 months and at over 13 months after operation of 28 rotator cuff tears. The re-tear rate was 12.5% in SSP tendon tear alone and 66.7% in massive tear group (p < 0.05). The re-tear rate of complete-thickness tear having concomitant tear of LHB or SSc tendon was 83.3% (p < 0.05). Conclusion: Preoperative risk factors of re-tear were massive tear and concomitance of LHB or SSc lesion. The re-tear occurred shortly after the operation.

089 Surgical treatment for massive rotator cuff tears: Incomplete reduction cases
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We reported the surgical results, and the evaluation of postoperative MRI of incompletely reduced massive cuff tears. Twelve patients (mean: 58.7 years) underwent surgery with Nobuhara’s technique. In 8 cases both anterior and posterior part and in 4 cases only anterior part were reduced (mean follow up: 49.2 M). JOA score improved from 51.2 to 92.2 M. The anterior portion was confirmed in 10 cases. Even if the cuff is anchored at proximally, and only anterior portion is repaired, the procedure is meaningful.

093 Volumetric change in shoulders after arthroscopic Bankart repair
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The shoulder joint volume changes after arthroscopic Bankart repair in traumatic anterior instability using 3DCT was evaluated. Nineteen shoulders were included, an average age of 25 years old, an average follow-up of 13 months. The total joint, anterior superior (AS) and anterior inferior (AI) volume were measured and compared to preoperative volumes. Total joint volume were reduced an average of 10%. The volume percentages of total joint volume were: AS: pre-op 20%, post-op 16% (p = 0.08), AI: pre-op 34%, post-op 29% (p < 0.05). This procedure was effective in reducing shoulder joint volume and this effect was particularly in the anterior inferior volume.

098 Clinical results of arthroscopic Bankart repair for traumatic anterior glenohumeral instability with bony Bankart lesion
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We have performed the arthroscopical Bankart repair by reposition of bony fragment for traumatic anterior glenohumeral instability with bony Bankart lesion. The purpose of this study is to compare the clinical results with those of the case without bony fragment. The cases with bony Bankart lesion were 10 cases. The average postoperative JSS-SIS Score was 93 points. There was no significant correlation between postoperative JSS-SIS Score and existence of bony fragment. This procedure for traumatic anterior glenohumeral instability with bony Bankart lesion led the same favorable results as the case without bony fragment.

113 Downward distraction arm at side test (DDAS test) for detecting rotator interval tears
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The present study was undertaken to elucidate the specificity of the new test named Downward Distraction Arm at Side (DDAS) test for detecting the rotator interval tears. The examiner holds the patient’s suspended elbow to control the neck of the humerus. Then the affected arm is distracted downward quickly either in a internally rotated or externally rotated position. The test is positive if the patient felt an apprehension of shoulder dislocation with various degrees of pain only in the externally rotated position. Among 15 patients of rotator interval tears, DDAS test was positive in 12 ones (80% of sensitivity). DDAS test is useful for detecting rotator interval tears.

115 Factors influencing the outcome of nonsurgical treatment for partial-thickness rotator cuff tears
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The purpose of this study was to analyze factors that influence outcome of nonsurgical treatment for partial-thickness rotator cuff tears (PTRCTs). Sixty-one patients with PTRCTs were evaluated. All patients were treated nonsurgically for the mean duration of 5.7 months. Factors of the 33 nonresponsive patients to the 28 responsive patients to treatment were compared. Identified factors that had significant difference between the two groups were age, size of the subacromial spur, bursal side tear, and range of forward elevation and external rotation. This study suggested that these factors may induce the poor outcome of nonsurgical treatment for PTRCTs.

124 Classification of 2, 3-part surgical neck fractures of the proximal humerus: Surgical treatment by a Polarus humeral nail
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Seventy-two humeral neck fractures were treated by Polarus Nail. According to the length of the neck and deformity of the head, all fractures were classified. In long neck, neutral or valgus-short neck and 3-part neutral or valgus group (56 cases), all cases were healed satisfactorily. In varus-short neck and 3-part varus group (16 cases), 12 cases showed severe varus deformity and the head was cut out in 6 cases. Polarus Nail is useful for long neck and neutral or valus-short neck fractures. In varus-short neck and 3-part varus fracture, this nail should be treated carefully.