ISAKOS

International Society of Arthroscopy, Knee Surgery and Orthopaedic Sports Medicine

9th Biennial ISAKOS Congress • May 12-16, 2013 • Toronto, Canada

Paper #96

Alterations of the Deltoid Muscle After Open Versus Arthroscopic Rotator Cuff Repair

Nam Su Cho, MD, PhD, KOREA
Sang Won Cha, MD, KOREA
Yong-Girl Rhee, MD, KOREA

Kyung Hee University Hospital
Seoul, KOREA

Summary:
Between open and arthroscopic repair for large to massive rotator cuff tears, there was no significant difference in detachment of the deltoid origin and alterations of the deltoid muscle after repair.

Abstract:
Background:
Arthroscopic repair is preferred because open repair may cause postoperative deltoid detachment. However, it is not determined exactly whether there is detachment of the deltoid origin and alterations of the deltoid muscle after open repair with deltoid splitting technique.

Purpose:
The purpose of our study was to compare postoperative alterations of the deltoid muscle between open and arthroscopic repair for large to massive rotator cuff tears.

Study Design:
Level III, Case-control study.

Methods:
One hundred thirty five patients who underwent surgical repair for large to massive rotator cuff tears and had routine follow-up MRIs at least 6 months after surgery were enrolled in this study. Open repair had been performed in 56 cases and arthroscopic repair in 79 cases. The mean age at the time of operation was 59.7 years (range, 44 to 79 years) in the open group and 57.6 years (range, 40 to 75 years) in the arthroscopic group. The mean duration of follow-up after surgery was 20.2 months (range, 12 to 34 months) and 22.1 months (range, 13 to 32 months), respectively. The detachment and thickness of the deltoid muscle at its proximal origin were recorded in 5 zones on MRI. The alterations and fat infiltration of the deltoid muscle, adhesion or fibrosis in subdeltoid and subacromial space, and postoperative integrity of the repaired rotator cuff were evaluated.

Results:
Partial detachment of the deltoid occurred in 1 case (1.8%) in the open group and in 2 cases (2.5%) in the arthroscopic group (p=0.80). All the partial detachments occurred in zone 2 and 3. Attenuation of proximal origin of the deltoid was found in 3 cases (5.4%) in the open group and in 4 cases (5.1%) in the arthroscopic group (p=0.87). Atrophy of the deltoid muscle was shown in 3 patients (5.4%) in the open group and 4 patients (5.1%) in the arthroscopic group (p=0.61). Fat infiltration of the deltoid muscle was found in 6 cases (10.7%) in the open group and in 3 cases (3.8%) in the arthroscopic group (p=0.09). Adhesion or fibrosis in subdeltoid and subacromial space was shown in 7 patients (12.5%) in the open group and 2 patients (2.5%) in the arthroscopic group (p=0.045). The retear rate of repaired cuff was 30.3% in the open group and 40.5% in the arthroscopic group (p=0.74). In the VAS, UCLA and Constant scores at the last follow-up, there was no statistically significant difference between the two groups (p=0.40, 0.11, 0.11).

Conclusion:
Between open and arthroscopic repair for large to massive rotator cuff tears, there was no significant difference in detachment of the deltoid origin and alterations of the deltoid muscle after repair. The risk of postoperative alterations of the deltoid existed even in arthroscopic surgery as in open surgery. For large to massive rotator cuff tear where a sufficient repair is difficult using arthroscopic technique, open repair would be an acceptable technique as far as the deltoid muscle is meticulously reattached after surgery.

Key Words:
Shoulder, Rotator cuff tear, Repair, Open, Arthroscopic, Deltoid detachment.