

Purpose

Ultrasonic suture welding is a new technology that allows the creation of secure suture loops without tying knots. This study was undertaken to assess the clinical results of arthroscopic rotator cuff repair with ultrasonic suture welding. Fifty-five consecutive patients treated by one surgeon were retrospectively evaluated with an average follow-up of 23 months. These patients were then compared to a group of 50 consecutive patients treated by the same surgeon with mini-open cuff repair and suture welding with similar follow-up.

Methods

The groups were similar in regards to age, sex, hand dominance and preoperative duration of symptoms. All the surgeries were performed in an outpatient ASU under a general anesthetic in the lateral decubitus position. All the patients had an exam under anesthesia, glenohumeral arthroscopy and arthroscopic acromioplasty.

The arthroscopic group underwent fixation of the tendon through a three portal technique. Sutures were passed through a lateral portal and retrieved through an anterior portal. Bone anchors were used to fix the tendon to the greater tuberosity. Welding of both interval and anchor stitches was accomplished through the lateral portal.

The mini-open group underwent fixation of the tendon through a standard enlarged lateral portal. The same bone anchors were used in both groups. Both groups underwent the same post operative pain control and rehabilitation programs.

Results

All patients were evaluated by an independent examiner using the UCLA scale. 52 of the 55 patients in the arthroscopic group were available for evaluation with an average of 23 months post op. Pre-op UCLA score averaged 14.6 and post-op 31.8. There were three revisions in this group of patients; one for post operative adhesive capsulitis and two for a recurrent tear. One patient experienced a transient radial nerve palsy.

47 of the 50 patients treated with mini-open repair were available with an average follow-up of 26 months. Pre-op UCLA score averaged 12.5 and post-op 29.6. There were two revisions in this group for post-operative trauma that caused recurrent tears.

The post operative scores of the arthroscopic group were significantly superior to the mini-open group ($p=0.0291$).

Conclusion

Suture welding technology facilitates arthroscopic rotator cuff repair by obviating the need to tie arthroscopic knots. The results of arthroscopic cuff repair and suture welding are superior to mini-open repair and suture welding.