Arthroscopic Transosseous Suture Without Implant for Rotator Cuff Tears


Key Points:
• Since 2005, arthroscopic TO RCR without using implants are performed with the procedure being inexpensive and having good clinical outcomes.
• The presence of anchors in greater tuberosity makes reoperation difficult, especially when numerous metal anchors are used. Because TO anchorless technique uses only sutures and 3 bone tunnels with 2mm diameter, it facilitates revision surgery.
• TO RCR offers lower retear rates and lower cost.

Abstract

Aim: In 2005, we developed an anchorless technique for arthroscopic transosseous rotator cuff repair without implant. We aimed to clarify the differences in clinical outcome and retear rates between patients receiving absorbable mattress sutures and those receiving non-absorbable sutures.

Materials and methods: In this retrospective cohort study, we analyzed 131 cases in which absorbable mattress sutures were used and 384 cases in which only non-absorbable sutures were used.

Three 2-mm Kirshner wires with perforated tips were inserted through the inferior margin of the greater tuberosity into the medial edge of the footprint. After pulling the rotator cuff stump laterally, 3 Kirshner wires were threaded through the rotator cuff and skin. Five threads were passed through 3 bone tunnels using the perforated tips of the Kirshner wires. The surgery was completed by inserting 2 mattress sutures and 3 bridging sutures. In addition to retear rates, the surgical cost of other TO methods was investigated.

Results: The retear rate was 3.1% using absorbable mattress sutures and 6% using non-absorbable suture only. It was 12% using the hollow needle method and 3.7% using the ArthroTunneler method. The surgical cost was $9–12 for our procedure, $121 for the hollow needle method, and $600 for the ArthroTunneler method.

Conclusions: We found that using absorbable thread for mattress sutures reduced the retear rate. A big advantage of our technique is that it is inexpensive because the only surgical materials required are suture threads.

Key words: Shoulder joint, Rotator cuff, Arthroscopy, Suture techniques