

## Paper 135

**Title:** Surgical Treatment of Pectoralis Major Tendon Ruptures: A Retrospective Review of 134 Patients Tendon Ruptures

**Authors:**

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**Objectives:** Pectoralis major tendon ruptures are relatively uncommon injuries. The literature is limited to several small case series, the largest containing 24 cases, and systematic reviews. However, still little is known about the demographics of this injury or the outcomes of operative repairs. We present a series of 134 traumatic pectoralis major tendon ruptures, which were treated surgically. This study aims to provide more information on injury demographics and surgical outcomes in order to learn more about making the diagnosis, preferred method of repair, and complications surrounding surgical treatment of both acute and chronic tears.

**Methods:** A retrospective review was performed on 134 acute and chronic traumatic pectoralis major tendon ruptures repaired surgically from 2008 to 2014. Procedures were performed at a multi-surgeon (55 surgeons), multi-center (13 centers) community-based integrated health care system. Pre- and post-operative data were obtained by a retrospective chart and imaging review. Categorical variables were compared using chi-square or Fisher's exact test.

**Results:** 134 pectoralis major tendon ruptures were treated surgically. The average age was 34 years (15 to 61). 18% were laborers and the most common mechanism of injury was weight lifting (62%). The average time from injury to surgery was 10 weeks. 76% were acute, 8% were subacute, and 16% were chronic ruptures. Operative findings revealed a tendon rupture in 92% of cases (122/134), a musculotendinous rupture in 13% (18/134), and 0.7% partial tears (1/134). Surgical repair techniques consisted of suture anchors (40%), sutures through bone tunnels (25%), suture button (19%), and an end-to-end suture repair (8%). Six patients (4%) needed allograft augmentation at the time of surgery. There were 17 complications (13%): 4 infections, 5 cosmetic wound concerns, 1 transient neuropraxia, 2 fractures, 2 postoperative frozen shoulders, and 3 failures. Surgical treatment with bone tunnels was associated with the highest complication rate in this series (5%), followed by suture anchors (4.4%), end-to-end repair (2.2%), and suture button repair (0.74%). One patient had a re operation, which was for a failed repair (0.7%). The average follow up time was 71 days (1-2268 days). 86% of patients were able to return to their occupation at full capacity. The complications rates between each method of repair seen in our study were not statistically different from one another. When "implant" versus "no implant" was evaluated, we found that use of an implant was associated with a lower re-tear rate ( $p=0.0782$ ), a lower rate of fracture ( $p=0.0782$ ), and a lower rate of post operative stiffness ( $p=0.0782$ ), and all 3 trended toward significance.

**Conclusion:** This is the largest single series regarding the surgical treatment of pectoralis major tendon ruptures. Our study added to what we know about patient demographics and mechanisms of injury for a pectoralis tendon rupture. Surgical repair of pectoralis major tendon ruptures can be performed safely

with a low re-rupture rate and low risk of complications. Using a suture button had the lowest complication rate, and the use of an implant may potentially minimize complications. Further prospective studies are needed to determine the best surgical repair technique.