Surgical Reconstruction of Unrepairable Pectoralis Major Rupture Using Tendo-Achilles Allograft

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Background:

Rupture of the pectoralis major remains an infrequent injury but recently has been reported more commonly. A number of surgical repair techniques have been described for direct repair. However, on occasion, the pectoralis major muscle is so retracted that a tension-free direct repair is not possible.

Aim:

We describe a technique for allograft reconstruction of the pectoralis major, with our preliminary outcomes, where it is found or anticipated that a direct repair is not possible.

Results:

We performed a total of 142 pectoralis major repairs over a ten year period, of which 19 required allograft reconstruction. Of these 19 patients, 11 were available for response. All 11 patients were male with a mean age of 38.3 years (21 to 48 years). The mean time between injury and surgery was 12.2 months (4 to 30 months). Ten patients (91%) were unable to perform their previous level of work pre-operatively, with all patients returning to pre-injury occupation levels post-operatively. The main complaint prior to surgery was pain on pushing and moving the affected arm across the body, which improved in nine patients (82%), with no improvement reported in two patients. Strength improved significantly post-operatively, with only three patients reporting no improvement (paired t-test p=0.01). Six patients reported an improvement in cosmesis (50%).

Conclusions:

This technique involves the use of cadaveric tendo-achilles allograft to reconstruct the pectoralis major tendon attachment to the humerus with good early to mid-term results.

Figure 1: Three anchors placed in a step wise longitudinal pattern lateral to biceps to allow a footprint repair

Figure 2: Proximal end of allograft tendon secured to pectoralis major muscle followed by trimming of tendon distally. Suture anchors are also shown

Figure 3: Final appearance. Schematic illustration of the final reconstruction

Methods:

The main indication for surgery is pain and functional loss that adversely affects a manual worker to perform their job or competitive sporting activity. We describe a technique for allograft reconstruction of the pectoralis major where a direct repair is not possible.

References: