Indications:

1. Medial elbow pain and instability at the elbow, particularly in throwing athletes and those with high physical demands, that is not resolved with conservative rehabilitation. Also may occur as a result of traumatic injuries, such as a fracture to the elbow.
2. Tingling and numbness in the hand may also occur along the ulnar nerve distribution due to stretching of the ulnar nerve at the elbow.

Considerations:

1. The ulnar collateral ligament may be constructed using the patient’s own palmaris longus tendon or gracilis tendon (autograft); or an allograft may be used from foreign tissue (consult with surgeon).
2. The fascia covering the flexor-pronator unit is incised and the muscles retracted during the procedure.
3. An ulnar nerve transfer may also be performed during the surgery. The post-op protocol is the same, but this procedure should be noted, and nerve symptoms prior to surgery documented.
4. The tendon graft is very weak immediately post-op, with the transformation of a tendon into a functioning ligament requiring a gradual rebuilding process. The client should be educated on not testing the limits of the repair too soon and that the rehab process takes up to one year for return to playing level for pitchers, 6 months for other activities.

General Precautions for the Client:

1. No valgus stress to the elbow for 4 months post-op!
2. Client needs to be in a posterior elbow splint with elbow at 90 degrees (neutral or pronated forearm), and then to a hinged braced, with no terminal extension for the first 4 weeks post-op.
3. No passive stretching/or strengthening of the elbow for 4 weeks post-op.
4. Resuming throwing activities should not occur before 4 months post-op and should be on a graduated program.
**General Post-operative Goals Weeks 1-4:**

1. Protect the integrity of the reconstruction and promote tissue healing.
2. Decrease post-operative pain and inflammation.
3. Prevent atrophy of surrounding musculature at shoulder, elbow, wrist and hand.
4. Progress ROM to a maximum of 30 degrees extension and 120 degrees of flexion at 4 weeks.

**Post-Operative Protocol:**

**First Week Post-Op:**

- Client should be in a posterior elbow splint at 90 degrees of flexion and full pronation for the first week post-op.
- Initiate wrist and finger AROM immediately. May also start shoulder AROM exercises (except ER).
- Cryotherapy for inflammation 3-5x/day for 10-15 minutes.

**2-4 Weeks Post-Op:**

- Once out of posterior elbow splint or cast, fabricate a hinged elbow brace which blocks at 60 degrees of elbow extension, allowing 120 degrees of flexion to full (consult surgeon), with forearm in full pronation or neutral rotation.
- Increase the elbow extension by 10 degrees per week, allowing full extension by 4-6 weeks post-op.
- Continue with wrist, finger and shoulder exercises as above.
- Use elbow CPM in clinic with same settings as the hinged brace.
- May add shoulder isometrics (except ER), gripping exercises (theraputty, power web, etc.) and wrist isometrics.

**General Post-operative Goals Weeks 4-12:**

1. Gradually increase AROM to full.
2. Continue to protect the repair while increased ROM and strength.
3. Begin to work on regaining strength at the elbow.
4. Avoid valgus stress to the elbow.

**4-6 Weeks Post-Op:**

- Continue with the above exercises as needed.
- Shoulder ER exercises are now permitted.
- Work towards 0-145 degrees of elbow ROM, both actively, and now passively by therapist.
- Static extension splint may be provided as required.
- May discharge from hinged elbow brace at 6 weeks (on surgeon’s request). May need for outdoors and sleeping up to 8 weeks.
6-8 Weeks Post-Op:

- Continue with the above exercises as needed.
- Initiate isometric exercises for the elbow in flexion and extension only.
- Continue with passive therapist stretch to work towards full ROM.
- May use a turnbuckle brace to combat any extension lag at the elbow.

8-12 Weeks Post-Op:

- Discharge night splint wear.
- Progress to light resistance exercises, 1lb wrist curls, extensions, pronation/supination. 1lb. elbow flexion and extension exercises for biceps/triceps (caution to avoid any valgus stress to elbow).
- Continue to correct for any ROM lags at the elbow.

General Post-op Goals Weeks 12-24:

1. Progress to full strength.
2. Initiate return to sport with graduated throwing program at 16 weeks.
3. Return to work, may need to be modified if physical labour occupation.

12-24 Weeks Post-Op:

- At 12 Weeks Post-op, test strength at elbow, shoulder and wrist using digital dynamometry.
- Continue to progress full A/PROM as needed.
- Progress resistance program as tolerated, add shoulder rotator cuff strength exercises at this stage.
- At 16 Weeks, limited valgus stress is permitted within exercise program, but should not be loaded with weight, or dynamic (ie. overhead pitching).
- Return to modified work/activities. Avoid heavy/repetitive lifting, climbing.
- For competitive throwing athletes a progressive return to sport program may begin at 16 weeks post-op (consult physician and literature on throwing rehab programs).
- At 16+ weeks, the client may begin a regular gym strengthening program with emphasis on light resistance and gradual progression. Educate on monitoring for medial elbow pain or instability.

24 Weeks to 1 year Post-Op:

- Continue to progress for return to regular work.
- For throwing athletes, return to full competition at one year post-op, especially pitchers.

References from the Literature:


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