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Postsurgical Rehabilitation of a Rotator Cuff Tear

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Introduction

The rotator cuff helps to move and stabilize the shoulder and is comprised of four muscles and their tendons: the supraspinatus, infraspinatus, teres minor, and subscapularis. Rotator cuff tears are common in sports with overhead arm motions like baseball, softball, swimming, and tennis.³ Scar tissue from rotator cuff tears can lead to subscapular nerve entrapment which can lead to weakness and atrophy of the infraspinatus muscle¹ leading to further instability. Acute rotator cuffs tears are best treated by an immediate surgical repair. Some signs and symptoms can be weakness and pain when lifting the arm.³ The rotator cuff plays a major role in the stabilization and movement of the shoulder, so it is apparent that a rehabilitation protocol after surgery is equally as important as the surgery itself.⁴

Purpose

The purpose of this project is to determine a rehab protocol for a postsurgical rotator cuff tear. The structure under investigation is a newly repaired torn rotator cuff, that is in a very delicate state and will require treatment and rehabilitation immediately following surgery. Rehabilitation will continue until the rotator cuff has completely healed, and range of motion, strength, and stability have been restored to the glenohumeral joint.



<http://www.health.harvard.edu/media/content/images/Pendulum-swing.jpg>

Exercise Protocol

Phase 1

- Pendulum swings (20cm in diameter)^{1,2,4}
 - Bend over at the waist, let arm dangle and make small circles clockwise and counterclockwise²
- Isolated scapular depression & protraction^{2,4}
 - Bring shoulders up and back, trying to pinch your scapulas together while keeping good posture.^{2,4}

Phase 2:

- Wall Slides
 - Stand facing wall; place both hands on wall and slide hands and arms upward. Hold for 10 seconds then slide back down slowly.³
- Standing forward flexion
 - Stand facing mirror with hands rotated so thumbs face forward. Raise arms upward while keeping elbow straight and making sure not to hike shoulder blade.³



http://www.performancehealthacademy.com/media/catalog/product/c/cx-shld-dynamic-hug-male-14-6785-6__635573740476463966.jpg

Phase 3: (theraband exercises)

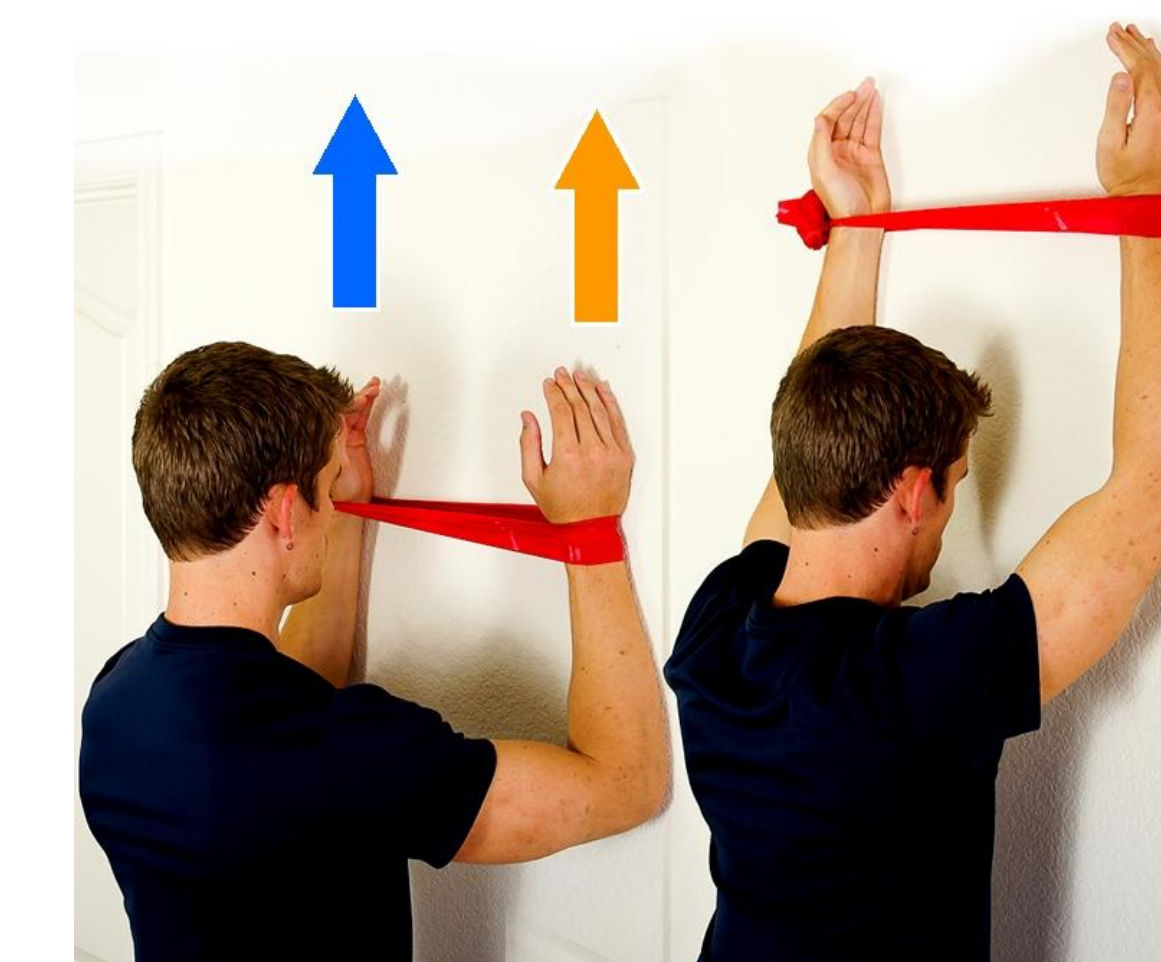
- Dynamic Hug
 - Attach tubing behind you at shoulder height and grip both ends of the tubing. Keeping the tubing on the outside of your shoulders, pull band forward and slightly downward in a "hugging" motion. Pause. Return slowly to starting position.³
- Prone Row
 - Lie face down with operated arm hanging freely off the side of bed. While keeping shoulder blade set, raise arm up toward ceiling while bending at the elbow (rowing motion). Hold. Return slowing to starting position.

Phase 4 : (strengthening and plyometrics)

- Pushup plus progression
 - Similar to a bench press motion, the arms are extended forward and followed by protraction of the scapula.⁴
- Rebounder throwing exercises
 - Starts bilaterally and progresses to unilaterally, the patient throws a weighted ball against a rebounder trampoline, weight progresses with time.⁴

Discussion

The protocol is split up into four different phases for postsurgical rehabilitation. Phase 1 involves minimal movement focusing on simple stretching and strengthening to avoid damaging the involved healing structures.^{3,4} Phase 2 is where ROM and strengthening exercises can be initiated.^{3,4} In phase 3, ROM should be established and improved upon, while strength in the different degrees of motion is worked on through resistance exercises using therabands.^{3,4} In phase 4, ROM and strength should be fully recovered and plyometrics can then be used to further increase strength and functionality.⁴



http://www.hep2go.com/ex_images/008001-009000/800image_008252.jpg

Conclusion

In conclusion, we believe that we have shown the importance of a rehabilitation program for a postsurgical rotator cuff tear. The work that needs to be put in after surgery should not be taken lightly and can ultimately affect not only the athlete's ability to play sports effectively, but also their ability to carry out activities of daily living. As there are many different kinds of exercises, and the exercises we chose to demonstrate are only a few of the many. A proper rehab program will incorporate a large variety of exercises tailored to the specifics of the injury and follow a progression through the phases of the recovery process.

References

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- ⁴ Meijden, O. A., Westgard, P., Chandler, Z., Gaskill, T. R., Kokmeyer, D., & Millett, P. J. (2012, April). REHABILITATION AFTER ARTHROSCOPIC ROTATOR CUFF REPAIR: CURRENT CONCEPTS REVIEW AND EVIDENCE-BASED GUIDELINES. Retrieved February 01, 2017