Hazel Dell Orthopedics and Sports Medicine

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Arthoscopic Bankart Repair/ Capsulorraphy

1. Defined
    a. Reattachment of anterior labrum to the glenoid
    b. Anterior capsulorraphy is a tightening of the joint capsule through sutures or other means
2. Goals
    a. Protect healing tissue
    b. Control post-operative pain and swelling
    c. Improve post-operative range of motion
    d. Improve functional strength, stability, and neuromuscular control
3. Rehabilitation Principles
    a. Be aware of compromised and/or repaired tissue
        i. Size of tearing of the anterior labrum
        ii. Amount of capsular plication
    b. Healing tissue should never be overstressed but appropriate levels of stress are beneficial
        i. Inflammatory phase days 1-3
        ii. Tissue repair with proliferation phase days 3-20
        iii. Scar tissue most responsive to remodeling 21-60 days but occurs from 1 to 8 weeks
        iv. Final maturation taking as long as 360 days
    c. Tissue reactivity of the shoulder and tissue healing will dictate the rehabilitation process. Reactivity is determined by the clinical exam
        i. Level I Reactivity
            1. Resting pain, pain before end range.
            2. Aggressive stretching is contraindicated.
            3. Grade I-II mobilization for neurophysiological effect
        ii. Level II Reactivity
            1. Pain onset occurs with end range resistance
            2. Grade III and IV mobilization appropriate per patient tolerance.
        iii. Level III Reactivity
            1. Engagement of capsular end feels with little or no pain.
            2. Pain occurs after resistance.
            3. Grade III and IV mobilization and sustained stretching is appropriate
    d. Eliminate inflammation as the cause of pain and neuromuscular inhibition

e. Ensure return of appropriate joint arthrokinematics
f. Apply techniques in loose packed unidirectional and progress to close packed and multidirectional based on tissue healing and patient response
g. Facilitate performance of complex skills with proprioceptive and kinesthetic techniques: Low to high, sagittal to frontal, bilateral to unilateral, stable to unstable, slow to fast, fixed to unfixed surface
h. Encourage life-long activity modification to reduce risk factors associated with re-injury. Work within the "safe zone" for upper extremity activity.
i. Encourage integration of core strengthening with therapeutic exercises
j. Factors that affect the rehab process
    i. Surgical approach
    ii. Tissue quality
    iii. Presence of concomitant pathology
    iv. Age of patient
    v. Co-morbidities
    vi. Pre and intra-operative range of motion
    vii. Pain and sensitivity levels
    viii. Cognitive abilities
k. Re-establish voluntary and pain free control of the rotator cuff to prevent rotator cuff shutdown and decrease humeral head migration with AROM. Exercising through the shrug sign may damage the repair. Progress through the following:
    i. Isometrics
    ii. Active assisted elevation with eccentric lowering and isometric holds
    iii. Isotonics <90 degrees ("downstairs" or gravity eliminated)
    iv. Isotonics >90 degrees ("upstairs")
    v. Rhythmic stabilization
        1. Flexion (prone and supine)
        2. Internal/External rotation
l. Maintain scapular stabilization and mobility; proximal stability for distal mobility.

4. Post op functional guidelines
    a. Dependant on functional range, strength, and neuromuscular control
    b. Drive
        i. Refer patient to physician
        ii. Refer patient to drug precautions
        iii. Refer patient to auto insurance coverage
        iv. No research to support recommendations for return to driving
    c. Work
        i. Sedentary up to 14 days
        ii. Medium to high physical demand level will be job specific
            1. Dependant on functional demands of the job
            2. Physician input is required to make final decision
    d. Sport
        i. Golf no earlier than 12 weeks

1. Encouraging backward golfing
    a. Beginning putting at 4 weeks
    b. Utilize the driving range for all practice
    c. Begin with short irons and partial swings progressing to long irons and full swing
    d. Progress to drivers and hybrid by 12 weeks

ii. Swimming
1. Kick board with arms at side at 2 weeks
2. Freestyle stroke no earlier than 14 weeks

iii. Weight lifting no earlier than 12 weeks
1. Reinforce safe zone principles
2. Emphasize scapular stabilizers
3. Begin with individual muscles, single joint movement, and light weights progress to large muscle groups, multi-joint movements, and heavy weights
4. Incline bench, bench press, and military press begin at 24 weeks.

iv. Throwing
1. Emphasize proper biomechanics and proprioception with a functional progression through phases of throwing no earlier than week 6
2. Initiate ER at 90^{o} abduction at week 9
3. Initiate interval throwing program no earlier than 12 weeks
4. Throwing from the mound no earlier than 16 weeks
5. Throwing from the mound, full velocity no earlier 20 weeks

v. Contact sports
1. No earlier than 20 weeks

5. Post op equipment guidelines
    a. Sling with abduction pillow at all times except when bathing or performing exercises
        i. Begin weaning out of sling at 4 to 6 weeks per MD orders.
    b. Polar Care as needed for pain and inflammation
6. Rehabilitation for Bankart Repair
    a. Week 1-4: Protective PROM Phase
        i. Precautions/Limits:
            1. No AROM
            2. Limit passive flexion 120^{o}
            3. Limit passive external rotation to 20^{o} at 0^{o} abduction
            4. Limit passive internal rotation to within the plan of the scapula.
            5. No passive abduction
            6. No passive extension past 0^{o}
        ii. Clinical Expectations by end of week 4
            1. Flexion to 120^{o}
            2. External rotation to 20^{o}

3. Achieve PROM to post-op restrictions by end of week 4.

iii. Treatment
1. PROM for shoulder elevation such as pulleys, pendulum, or manual passive range
2. Grade I – II mobilizations and modalities
3. Isometric scapular setting and scapular AROM such as scapular clocks, shoulder shrugs, or shoulder squeezes
4. Sub-maximum pain free isometric contraction of the rotator cuff with gradual increase in force production.
5. Initiate internal/external rotation with resistance with respect to tissue reactivity and within ROM limitations
6. Gravity reduced rhythmic stabilization at 90^{o} of flexion in scapular protraction beginning gradually with light resistance and progressing from proximal to distal.
7. Initiate elbow, hand, and finger AROM and PREs for total arm strength
8. Initiate core strengthening exercises utilizing the Wellington Functional Foundation Model

b. Week 5 – 8: AROM Phase

i. Precautions/ Limits:
1. Limit flexion and scaption to 150^{o}
2. Limit abduction to 120^{o}
3. Limit external rotation to 60^{o} at 0^{o} abduction and 45^{o} at 45^{o} abduction

ii. Clinical Expectations by end of week 8
1. Flexion and scaption to 150^{o}
2. Abduction to 120^{o}
3. External rotation to 60^{o} at 0^{o} abduction and 45^{o} at 45^{o} abduction
4. Achieve AROM to 90^{o} of scaption
5. Achieve upper trap level for functional ER
6. Achieve iliac crest level for functional IR
7. Achieve 4-/5 strength for ER at 0^{o} abduction

iii. Treatment
1. Progress to grade III-IV mobilization if not meeting passive range of motion expectations
2. AAROM for shoulder elevation such as pulleys, wand, wall walks, or manual assisted range
3. AROM progressed from AAROM
4. Progress from gravity reduced to gravity resisted elevation
5. Passive posterior shoulder and IR stretching
6. Functional IR stretch with scapular stabilization such as reaching behind the back at week 6
7. Initiate partial weight bearing exercises such as wall push up at week 6
8. Initiate 2 handed plyometrics at week 6

9. Emphasize integration of core strengthening into therapeutic exercises utilizing the Wellington Functional Foundation Model

c. **Week 9-12: Strengthening Phase**
   i. Precautions/limits
      1. Progress symptomatically
   ii. Clinical expectations by end of week 12
      1. Flexion and scaption to 160^{o}
      2. External rotation to 90^{o} at 90^{o} abduction
      3. Achieve 150^{o} of active elevation without shrug sign
      4. Achieve C7 level for functional ER
      5. Achieve L5 level for functional IR
      6. 4/5 strength for ER at 0^{o} abduction
   iii. Treatment
      1. Initiate ER at 90^{o} abduction at 9 weeks
      2. Grade III-IV joint mobs if indicated
      3. Progress resistance and reps with isotonics throughout phase concentrating on eccentric limb control
      4. Advance proprioception per rehabilitation principles
      5. Advance weight bearing exercises per rehabilitation principles
      6. Initiate 1 handed plyometrics at week 8
      7. Initiate overhead plyometrics at week 10
      8. Progress integration of core strengthening into therapeutic exercises utilizing the Wellington Functional Foundation Model

d. **Week 13+: Functional Training**
   i. Precautions/Limits
      1. Progress symptomatically
   ii. Clinical expectations by the end of week 16
      1. Achieve symmetrical AROM for elevation without shrug sign.
      2. Achieve symmetrical functional ER and IR.
      3. Achieve 4+/5 strength for ER at 0^{o} abduction
      4. Achieve 4/5 strength for ER at 90^{o} abduction
      5. Achieve symmetrical strength at 90^{o} abduction
   iii. Treatment
      1. Initiate sports specific training
      2. Progress isotonics, isokinetics, and rhythmic stabilization
      3. Continue PNF and plyometics in open and closed kinetic chain
      4. Continue to progress rotator cuff and scapular strengthening and proprioception encouraging working shoulder safe zone principles
      5. Continue to progress core strengthening utilizing the Wellington Functional Foundation Model

6. Lower extremity strengthening and stretching
7. Return non-overhead athletes back to sports as tolerated per post op functional guidelines.

7. References

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