SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

The following Shoulder Posterior Stabilization Post-Operative Guideline was developed by HSS Rehabilitation and is categorized into five phases with the ultimate goal of returning the athlete to full competition. It can be used for patients undergoing a variety of posterior stabilization procedures with attention given to exact location of repair and any concomitant procedures. It is important that full range of motion is restored while respecting soft tissue healing. Classification and progression are both criteria-based and time-based due to the healing constraints of the body. The first phase is focused on soft tissue healing and maintenance of pain-free range of motion (ROM). Phases two and three are focused on building foundational strength and stability which will allow the athlete to progress to phase four which includes plyometric exercises. With the completion of phase four the athlete will be able to start the final phase which includes interval sports programs. Cardiovascular endurance, hip, and core strengthening should be addressed throughout the rehabilitation process. The clinician should use their skilled judgement and decision making as the athlete advances as all progression may not be linear.

FOLLOW SURGEON MODIFICATIONS AS PRESCRIBED

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

Post-Operative Phase 1: Recovery (Weeks 0-2)

PRECAUTIONS

- Sling for 4-6 weeks (as per surgeon guidelines)
- No shoulder ROM
- Avoid stress on posterior shoulder joint
- No forced stretching
- Avoid painful activities

ASSESSMENT

- Quick Disabilities of Arm, Shoulder & Hand (Quick Dash)
- Numeric Pain Rating Scale (NPRS)
- Dressing/Incision status
- Cervical mobility
- Palpation
- Distal upper extremity ROM
- Static scapular assessment (Kibler Grading)[1,5]
- Posture assessment

TREATMENT RECOMMENDATIONS

- Patient education
- Postural awareness
- Gripping and hand active range of motion (AROM)
- Scapular retractions/sets
- Wrist AROM: flexion/extension/pronation/supination

CRITERIA FOR ADVANCEMENT

- Decreasing discomfort at rest

EMPHASIZE

- Protection of repair
- Reduction of tissue irritability
- Prevention of muscle atrophy

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

MODIFICATIONS TO PHASE 1

- If open repair, ensure protection of subscapularis by delaying passive range of motion (PROM) of shoulder external rotation (ER) and active internal rotation (IR).
- Consider limiting visit frequency depending on patient's presentation during this phase.

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

Post-Operative Phase 2: Beginning (Weeks 3-6)

PRECAUTIONS

- Sling for 4-6 weeks (as per surgeon guidelines)
- Perform PROM in the plane of the scapula (POS) (towel roll under arm)
- PROM (per surgeon guidelines):
  - Elevation to 90 degrees in POS until week 6
  - IR to neutral arm at side until week 5, to 45 degrees arm at side until week 6
  - ER arm at side to tolerance
- Monitor shoulder stiffness
- No forced PROM
- No weight bearing or closed chain exercises
- Avoid undue stress to posterior shoulder joint

ASSESSMENT

- Quick DASH
- NPRS
- Incision status
- Cervical mobility
- Thoracic mobility
- Palpation
- Shoulder PROM
- Static scapular assessment (Kibler Grading)[1,5]
- Posture assessment

TREATMENT RECOMMENDATIONS

- Continue phase 1 exercises
- Submaximal, pain free isometrics in neutral with towel roll under arm in all planes between weeks 5-8 (adhere to surgeon's preference)
- Begin PROM → AAROM
- Scapular retractions/sets

CRITERIA FOR ADVANCEMENT

- No pain at rest
- PROM: 90 degrees of elevation, IR to neutral, ER to 30 degrees
- Tolerance of scapular and rotator cuff (RTC) exercises without discomfort

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

EMPHASIZE

- Reduction of tissue irritability
- Activation of RTC and scapular stabilizer muscles

MODIFICATIONS TO BEGINNING PHASE

- If open repair, ensure protection of subscapularis by delaying shoulder PROM ER and AROM IR

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

Post-Operative Phase 3: Intermediate (Weeks 6-12)

PRECAUTIONS

- No painful, forced ROM (greater than 3/10 on NPRS)
- A/PROM: IR/ER in all planes to tolerance, elevation to 145 degrees until week 10
- Avoid weight bearing exercises
- No painful activities

ASSESSMENT

- Quick DASH
- NPRS
- Cervical mobility
- Thoracic mobility
- Palpation
- Shoulder PROM/AROM
- Shoulder Manual Muscle Test (MMT)
- Static/dynamic scapular assessment (Kibler grading)
- Grip strength (grip dynamometer)

TREATMENT RECOMMENDATIONS

- Weeks 6-9:
  - Range of Motion:
    - AAROM: supine self-assisted, supine cane, pulleys
  - Scapular strengthening
    - Prone rows, prone shoulder extensions to neutral
    - Stabilization: including proprioceptive neuromuscular facilitation (PNF)
  - Rotator Cuff Strengthening
    - Resistance band isometric walk-outs
- Weeks 9-12:
  - Range of Motion
    - Lawn-chair progression (supine→reclined→seated→standing)
    - Progress to AROM within tolerance
  - Scapular strengthening:
    - Resistance band rows, shoulder extensions to neutral
  - Rotator Cuff Strengthening:
    - Resistance band isotonics arm at side (with towel roll)

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

CRITERIA FOR ADVANCEMENT

- Full shoulder AROM
- Shoulder MMT strength 4/5 below shoulder height

EMPHASIZE

- Full shoulder PROM and AROM
- Restoration of scapular and RTC muscle balance and endurance

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

Post-Operative Phase 4: Advanced (Weeks 13-19)

PRECAUTIONS

- No painful activities

ASSESSMENT

- Quick DASH
- NPRS
- Cervical mobility
- Thoracic mobility
- Palpation
- Shoulder PROM/AROM
- Elbow PROM/AROM
- Static/dynamic scapular assessment (Kibler grading)
- Shoulder MMT &/or hand-held dynamometry: assess limb symmetry
- Grip strength (grip dynamometer)

TREATMENT RECOMMENDATIONS

- Continue shoulder RTC and scapular stabilization exercises
    - 90/90 RTC as ROM allows (monitor for compensatory strategies)
- Initiate Thrower's Ten exercises
- Initiate weight-bearing progression (keep hands wider than shoulders)
    - Wall push-up
    - Table push-up
    - Kneeling push-up
    - Regular push-up
- Initiate plyometrics no earlier than week 16 (ball against rebounder or wall) over a 4 week period
    - Double hand chest pass
    - Double hand overhead soccer pass
    - Double hand chops
    - Single hand IR at 0° shoulder abduction
    - Single hand 90/90 IR
    - Eccentric catch (therapist toss)

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

- Endurance progression (ball vs wall, where applicable)
    - Double hand overhead wall taps
    - Single arm 90/90 wall taps
    - Single arm 12 o'clock to 3 o'clock wall taps
    - Exercise blade at multiple angles

CRITERIA FOR ADVANCEMENT

- Full shoulder AROM
- Symptom free progression through plyometrics and endurance program

EMPHASIZE

- Shoulder flexibility, strength and endurance
- Pain free plyometrics
- Kinetic chain linking

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

Post-Operative Phase 5: Return to Sport (Weeks 19–Discharge)

PRECAUTIONS

- All progressions should be pain-free
- Monitor for loss of strength and flexibility

ASSESSMENT

- Quick DASH
- NPRS
- Cervical mobility
- Thoracic mobility
- Palpation
- Shoulder PROM/AROM
- Static/dynamic scapular assessment (Kibler grading)
- Shoulder MMT &/or hand-held dynamometry: assess limb symmetry
- Grip strength
- Athletic Shoulder Test (ASH Test)
- Seated Shot-Put Test
- Y-Balance Test
- Closed Kinetic Chain Upper Extremity Stability Test (CKCUEST)

TREATMENT RECOMMENDATIONS

- Initiate interval sports programs at 5 months
- Continue with all upper and lower extremity flexibility exercises
- Continue with advanced shoulder and scapular strengthening exercises
- Gradually progress sports activities
- Monitor workload
- Consider collaboration with Performance Specialist

CRITERIA FOR ADVANCEMENT

- Symptom free progression through interval sports program
- Hand-held Dynamometry Limb Symmetry (e.g.: 110% symmetry ER/IR dominant)
- Independent with all maintenance exercises
- Assess need for throwing analysis

EMPHASIZE

- Return to sports participation

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.

HSS

SHOULDER POSTERIOR STABILIZATION POST-OPERATIVE GUIDELINE

References

1. Burkhart SS, Morgan CD, Kibler WB. The disabled throwing shoulder: spectrum of pathology part III: The SICK scapula, scapular dyskinesis, the kinetic chain, and rehabilitation. *Arthroscopy.* 2003;19(6):641-661. doi:10.1016/S0749-8063(03)00389-X.
2. Fried JW, Hurley ET, Duenes ML, Manjunath AK, Virk M, Gonzalez-Lomas G, Campbell KA. Return to play after arthroscopic stabilization for posterior shoulder instability: a systematic review. *Arthrosc Sports Med Rehabil*. 2020;3(1):e249-e256. doi: 10.1016/j.asmr.2020.08.007. PMID: 33615272; PMCID: PMC7879176.
3. Goldenberg BT, Goldsten P, Lacheta L, Arner JW, Provencher MT, Millett PJ. Rehabilitation following posterior shoulder stabilization. *Int J Sports Phys Ther*. 2021;16(3):930-940. doi: 10.26603/001c.22501. PMID: 34123543; PMCID: PMC8168996.
4. Gokalp O, Kirmizigil B. Effects of thrower's ten exercises on upper extremity performance: a randomized controlled study. *Medicine*. 2020; 16;99:42 (e22837).
5. Kibler WB, Uhl TL, Maddux JWQ, Brooks PV., Zeller B, McMullen J. Qualitative clinical evaluation of scapular dysfunction: a reliability study. *J Shoulder Elb Surg*. 2002;11(6):550-556. doi:10.1067/mse.2002.126766.
6. Wilk KE, Arrigo CA, Hooks TR, Andrews JR. Rehabilitation of the overhead throwing athlete: there is more to it than just external rotation / internal rotation strengthening. *PMR*. 2016;8:78-90.
7. Fontánez, Richard MD; De Jesus, Kevin MD; Frontera, Walter R. MD, PhD, FRCP; Micheo, William MD, FACSM. Return to Sports Following Shoulder Injury: Clinical Evaluation, Isokinetic, and Functional Testing. Current Sports Medicine Reports 22(6):p 191-198, June 2023. | DOI: 10.1249/JSR.0000000000001072.

Created: 05/2022
Revised: 05/2024

Copyright © 2022-2024 by Hospital for Special Surgery.
All rights reserved.