OS Trigonum Excision Post-Op Rehabilitation Protocol

Damien Richardson MD, MPH, FAAOS

This protocol provides you with general guidelines for initial stage and progression of rehabilitation according to specified time frames, related tissue tolerance and directional preference of movement. Specific changes in the program will be made by the physician as appropriate for the individual patient.

PHASE I: WEEKS 0 – 2

- Week 0-2: NWB Splint
- Week 2: Weight-bearing as tolerated CAM boot
    - Start Physical Therapy

PHASE II: WEEKS 2 – 6 (1 – 2 X WEEK PHYSICAL THERAPY)

- Weight bearing as tolerated CAM boot and wean from boot 2-4 weeks
- Exercises 2-4 weeks:
    - Gait Training
    - AROM plantarflexion without maximal contraction
    - AROM dorsiflexion to neutral
    - Gentle FHL stretching in NWB
    - Intrinsic activation in sitting (short foot/dome exercise)
    - Toe Yoga: Active toe flexion, extension, spreads
    - Balance progressions with short foot/dome
    - Proximal neuromuscular reeducation and strengthening (hip, lumbopelvic, core)
- Exercises 4-6 weeks:
    - Dynamic Balance Progressions
    - Band-resisted plantarflexion high rep/low load
    - Dance Specific Progressions**
        - Closed chain plié and releve (progressive weight bearing to standing)
        - Balance progressions en releve supported with ball under heel
        - Plantarflexion progressions without gripping through Achilles tendon

        - Plantarflexion with lateral or medial theraband focusing on neutral ankle alignment
        - Plantarflexion with toe flexion/extension for intrinsic activation

PHASE III: WEEKS 6 – 12 (1 X WEEK PHYSICAL THERAPY)

- Exercises 6-8 weeks:
    - Progress dorsiflexion stretching
    - Cardio/Fitness- bicycling, elliptical
    - Standing calf strengthening gastroc (knee extended) and soleus (knee flexed)
    - **Modified return to dance class at 6 weeks
- Exercises 9-12 weeks:
    - Progressive weight bearing plyometrics
        - Functional performance criteria: able to perform 25 single leg calf raises gastroc (knee extended) and soleus (knee flexed)
    - Initiate sports specific training
    - Pass functional tests for general sport (dance**)

**DANCE SPECIFIC CONCEPTS TO CONSIDER

1. Balance exercises with small to medium size ball under the heel. This can help with control at different levels of releve.

2. Pointing the ankle and learning to relax the Achilles tendon. Dancers are often able to figure this out. Have the patient maximally plantar flex, place their fingers on the Achilles, and try to relax it while maintaining the ankle motion and intrinsic contraction needed for midfoot. Dancers often over contract with their gastroc to maximally plantar flex the ankle which in turns "jams" the posterior ankle. Pointe shoe dancers use intrinsics to "pull up" out of a pointe shoe while relaxing their gastroc when en pointe.

3. Theraband plantarflexion focusing on neutral ankle. The theraband will either have inversion or eversion pull during plantar flexion AROM.

4. Return to dance considerations to be made with therapist and patient based on style, age, experience, pain, edema, strength and neuromuscular control.

5. Dance Functional Tests: a. Airplane Test, b. Topple Test, c. Sauté Test, and d. Pass on the pencil test for return to pointe

    - “Airplane Test: The dancer assumes single-leg stance, with the trunk and nonsupport lower extremity extended parallel to the ground. The patient then performs 5 controlled single-leg squats in this position, as the arms horizontally adduct toward the ground. A “pass” is indicated by successful completion of 4 out of 5 repetitions, without lower extremity alignment deviations or loss of trunk control”.2

- “Topple Test is an assessment of total body control during a pirouette, a 360° rotation of the entire body while in single-leg balance. A “pass” is indicated by successful performance of the pirouette with the balance leg in full knee extension, gesture leg in passé position, maintenance of vertical trunk position during the descent from the skill, and proper control of the supporting leg during deceleration”. [2]

- “Single-leg Sauté Test is an assessment of dynamic trunk control and lower extremity alignment as the dancer performs 16 consecutive single-leg jumps. A “pass” is defined as at least 8 of the 16 jumps executed with a neutral pelvis, upright and stable trunk, proper lower extremity alignment, appropriate toe-heel landing, and a fully pointed foot in the air”. [2]

- “Pencil test: The pencil is placed on the dorsal talar neck. When the straight edge of the pencil can clear the distal-most part of the tibia just proximal to the malleoli, it is considered a “pass,” as this represents that there is greater than or equal to 90° of ankle plantar flexion”. [2]

REFERENCES

1. NYU LANGONE MEDICAL CENTER REHABILITATION PROTOCOL: OS TRIGONUM EXCISION

2. Filipa, A., & Barton, K. (2018). Physical Therapy Rehabilitation of an Adolescent Preprofessional Dancer Following Os Trigonum Excision: A Case Report. Journal of Orthopaedic & Sports Physical Therapy, 48(3), 194–203.