OrthoIllinois PODIATRIC SURGERY

Brostrom/Peroneal Tendon Repair Protocol

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General Instructions:

The Brostrom Procedure is an anatomical lateral ligament surgical reconstruction commonly performed for lateral ankle instability and/or in case of failure of conservative management for chronic ankle instability

This protocol is a general guideline only. If effusion, pain, limited weight bearing status and significant limitations with daily function persist, this exercise progression should be decelerated. Palliative modalities and appropriate modification to home program and day to day activities should also be considered. Conversely, the patient can be progressed more rapidly as long as effusion, pain, weight bearing status and day to day function continue to improve. Dr. Sorensen will be making a 4th re-check with the patient at approximately 9 weeks post-op. **Formal physical therapy is usually initiated at 6 weeks post-op, which is where this protocol begins.**

Patient Name:_____ Date:_____

Surgery Date:___/___/___ Surgeon:_____

FINAL ASSESSMENT FORM:

--see final assessment form in back of protocol
(Should include, but not limited to the following)

1. ***Average* Pain Rating** on 0 to 10 pain scale
2. **Single Leg Balance** (eyes open; normal shoes; best of 3 trials)
3. **Single Leg Stance With Opposite Lower Extremity Reach** (Measure from toe of stance leg to toe of reaching leg: best of 3 trials: patient must reach out and return to stance without touching down)
4. **Forward Lunge** (assess L and R; measure distance from toe of stance leg of toe of lunge leg; touching ground with foot of lunge leg when returning to start position is disqualified; best of 3 trials)
5. **Lateral Lunge** (assess L and R; patient should start with lateral side of lunging foot on start line; measure distance from start line to lateral side of lunging foot: touching ground with foot of lunge leg when returning to start position is disqualified; best of 3 trials)
6. **Medial Step Downs** (count number of successful repetitions performed in 30 seconds; stance leg is on step while pt. touches opposite heel on ground and returns to where both feet are same level; stop test if increased pain or if patient has large break in form; Also rate overall control of exercise as poor, fair, good, or excellent.

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At discharge please fill out Final Assessment Form attached to protocol and fax back to Dr. Sorensen's office (847) 390-9345*

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase 1
6-8 Weeks Post-Op

Criteria to Progress to this Phase:
- Cleared by physician to initiate therapy
- Tissue is in the end stage of repair and proliferation phase of healing
  (Tissue unable to withstand a large inversion force)

Anticipated Impairments and Functional Limitations:
- Abnormal gait cycle with impaired balance/proprioception
- Decreased joint AROM and strength
- Difficulty with FWB transitioning from walking boot to regular shoes without assistive device
- Unable to safely ambulate over uneven ground without supportive brace wearing regular shoes

Goal:
- Decrease pain and swelling
- Increase ankle joint ROM, **(Limiting Plantarflexion and Inversion to Pain Free Limits)**
- Increase strength and proprioception
- Wean from walking boot, utilizing it only when increased symptoms
- Improve gait to full weight bearing in regular shoes utilizing Rocket Soc®/ASO or similar type of lateral ankle support
- Increase soft-tissue flexibility
- Increase knowledge and awareness of injury and rehabilitation

Rationale:
- Modalities decrease pain and swelling
- Orthotics help to control subtalar joint movement
- PREs and closed chain activities increase strength and improve balance and coordination
- ROM improves gait cycle and ambulation up and down steps
- Home exercise programs and education improve patient follow-through at home

Intervention:
1. **WBAT without a walking boot in regular tennis shoes using pain and effusion as a guide**
2. If pain and effusion are a problem, wear walking boot at least 5 hours per day until no pain is experienced without it. Then re-initiate weaning off of boot walker.
3. E-stim, US, Game Ready Compression, and/or ice may also be utilized if effusion and pain are a problem. US and ice need to be performed with ankle in 0 degrees DF)
4. Initiation of pool program or unweighting apparatus may be necessary to progress towards full pain-free WB
5. **Joint mobilizations of the foot and ankle should be initiated only if a limitation of talocrural DF is present (GRADE II ONLY WITH NO PAIN)**
6. Initiate pain free stationary bike with absent to minimal resistance
7. Gentle gastroc/soleus stretch. (seated with a towel initially, progressing to full WB runners stretch with a small block or magazine under medial aspect foot or stretching wedge)

8. Hamstring, quad, hip flexor, and piriformis stretch
9. Seated heel-toe raises progressing to standing heel-toe raises while supporting with hands on counter top or wall
10. Toe curls and toe extensions for foot intrinsics. (progress seated to standing position)
11. Pain free BAPS board seated no greater than level 2 through all phases of therapy. (progress to bilateral standing BAPS – "surfer BAPS")
12. Pain free double and single leg total gym leg press. (progress to cushion on platform of TG with no pain)
13. Pain free single leg stance while supporting with bilateral upper extremities. (Initially performed for 5 to 100 seconds each repetition, progressing to 15 seconds or more each repetition)
14. Rocker Board Sagittal Plane with bilateral stance (performed in standing)
15. Pain free Slide Board Adduction. (Standing on involved leg sliding uninvolved leg in frontal plane motion)
16. Pain free forward lunges. (low intensity; progressing towards dumbbells)
17. Pain free forward treadmill not to exceed a 2 degree incline.

--Refer to phase I home maintenance program in back of protocol--

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase II
8-10 Weeks Post-Op

Criteria to Progress to this Phase:
- Patient progressing with decreased pain and stable edema
- Progressing with AROM
- Progressing with single leg balance
- Patient no longer needs walking boot
- Patient demonstrating progression towards FWB and normalized gait in regular shoes without use of assistive device

Anticipated Impairments and Functional Limitations:
- Mild to moderate restriction in joint and/or muscle flexibility
- Mild edema causing decreased AROM and limiting strength
- Limited strength creating decreased proprioception
- Proprioception not symmetrical with uninvolved lower extremity creating instability with ambulation
- Decreased mid-stance and toe-off in gait cycle of involved lower extremity without assistive device

Goal:
- Increase AROM of Talocrural Dorsiflexion to within 5 degrees of uninvolved lower extremity
- Increase soft tissue flexibility throughout bilateral lower extremities to close within symmetrical limits
- Increase involved single leg balance to within 15 seconds of uninvolved lower extremity
- Mid-stance and toe-off phase of gait close to within symmetrical limits.
- Pt to utilize regular shoes 100% of time with day to day activities.
- Decreased pain with weight bearing and gait
- Initiate occupational/sports related activities

Rationale:
- Modalities decrease pain and swelling
- Aerobic activity promotes improved blood flow and decreased edema via muscular pump mechanism
- Repetitive functional patterns promote improved timing, coordination, and control of lower extremity
- Strengthening in functional patterns provide neuromuscular re-education and strengthening of weakened musculature
- Flexibility improves talocrural joint function which improves pain with ambulation, squatting, and stair climbing

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Intervention:

1. Continue with palliative modalities after therapy if pain and effusion remain a problem.
2. Increase resistance of stationary bike within pt's tolerance
3. Talocrural mobilization if DF deficit. (Grade II only)
4. Gastroc/soleus, quads, hamstrings, hip flexor, and piriformis stretch in clinic as needed.
5. Progress to single leg toe raise if pt. is able to perform 3x10 double leg toe raise.
6. Initiate single leg standing BAPS no greater than level #2 (opposite toe can touch; progress with weights placed anterior, posterior, and medially).
7. Progress resistance of pain free single leg total gym leg press. (double leg can be d/c'd)
8. Initiate pain free wall squats. (can progress to stance on cushion and/or therapy ball on wall)_
9 Progress pain free single leg stance time per repetition and/or stand on unstable surface.
10. Progress bilateral stance rocker board to holding a weight or a ball.
11. Progress slide board in frontal plane by placing stance leg on uneven surface.
12. Initiate repeated tubing in standing ADD, EXT, and FLEX standing on involved leg. (start at 30 seconds each direction and progress to 1 to 2 minutes)
13. Progress pain free forward lunges to unstable surface
14. Progress pain free forward treadmill MPH
15. Initiate pain free retro treadmill. (optional-----sometimes helpful if ant. Jt pain present with squatting or stairs)
16. Initiate pain free anterior and medial step downs. (begin with 2 inch step and progress up to 8 inch step)
17. Initiate pain free single leg stance with anterior reach and lateral reach for soleus strengthening
18. Initiate appropriate intensity level of occupational/sports specific activities

--Refer to phase II home maintenance program in back of protocol—

Rehabilitation Phase: Dates From___/___/___ to___/___/___

Phase III
10-16 Weeks Post-Op

Criteria to Progress to this Phase:

- Abolished pain with ambulation over flat ground
- AROM dorsiflexion to within 5 degrees of uninvolved lower extremity
- Single Leg balance to within 10 seconds of uninvolved lower extremity
- Mid-stance and toe-off of gait close to within symmetrical limits
- Patient utilizing regular shoes 100% of the time with normal day to day activities

Anticipated Impairments and Functional Limitations:

- Limited strength creating decreased proprioception
- Mild restriction in joint and muscular flexibility
- Mild pain only with higher level occupational/sporting activities
- Moderate limitations ambulating/running over uneven ground

Goal:

- Mid-stance and toe-off phase of gait to within symmetrical limits
- Soft tissue flexibility of bilateral lower extremities to symmetrical limits of uninvolved lower extremity
- Increase involved single leg balance to within 5 or 10 seconds of uninvolved lower extremity
- Independence and proper performance with home exercise program progression
- Pt. performing repetitive occupational/sporting activities with mild to abolished pain
- Discharge palliative modalities in clinic (transition to home with ice, etc…)
- **ROM expectations prior to D/C: DF: 10 deg, PF, 25 deg, Inversion: 10 deg, Eversion: 20 deg**

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Rationale:

- Aerobic activity promotes improved blood flow and decreased edema via muscular pump mechanism
- Repetitive functional patterns promote improved timing, coordination, and control of lower extremity
- Strengthening in activity-specific patterns provide neuromuscular re-education and strengthening of weakened muscle
- Advanced dynamic functional strengthening activities ensures a safe return to all occupational/sporting activities

Intervention:

1. Initiate Stairmaster and/or continue bike for warm-up
2. Progress joint mobilizations only as needed. (most patients will have close to full available motion at this time)
3. Lower kinetic chain flexibility as needed
4. Forward and/or retro TM
5. Pain free standing heel-toe raises progressing to one leg
6. D/C standing toe curl/ext.
7. Progress standing BAPS with weight at medial, lateral, and anterior positions; no greater than level #2
8. Progress total gym leg press and/or wall squats with resistance and/or unsteady surface.
9. Progress time of single leg stance on unsteady surface.
10. Progress rocker board with T-band perturbations around pt's waist in various positions.
11. D/C slide board
12. Progress hip 3-way with resistance band to standing with stance leg on cushion
13. Progress repetitions and/or surface of forward lunges
14. Initiate pain free lateral lunges
15. Progress with step height of anterior and medial step downs
16. Progress with repetitions, time or surface of lower extremity reaching
17. Progress intensity of occupational/sports specific activities.
18. Initiate treadmill running (12-14 weeks)
19. Initiate jumping/hopping/agility drills (14-16 weeks)

--Refer to phase III home maintenance program in back of protocol—

DISCHARGE ASSESSMENT

****Please fill out final assessment form at Discharge and fax to Dr. Sorensen's office (847) 390-9345****

Suggested Home Maintenance Program

Phase I:

1. General pain free AROM exercise in non-WB position (alphabet, etc…)
2. Pain free Gastroc-Soleus stretch non-WB
3. Pain free Seated heel/toe raises
4. Isometric ankle eversion
5. Pain free SL stance eyes open
6. Pain free Hip 3-way(light resistance)
7. Stationary bike or pain free pool exercise can be performed to improve conditioning
8. Ice, elevation, and compression as needed
9. ASO/Velocity ankle brace should be worn at all times

Phase II:

1. Pain free WB gastroc-soleus stretching
2. Pain free standing heel/toe raises
3. Single leg balance, eyes open and/or closed
4. Pain free hip 3-way against resistance band
5. Pain free step-ups and step downs
6. Pain free single leg stance with reach
7. Bike, Treadmill, or pool exercise for LE conditioning
8. Ice as needed
9. ASO/Velocity ankle brace worn at all times

Phase III:

1. Standing heel/toe raises and standing gastroc-soleus stretch
2. Repeated tubing in standing
3. Step ups and step downs
4. Single leg stance with reach
5. Initiate forward and lateral lunging
6. Stairmaster, Bike, Treadmill for LE conditioning
7. Ice as needed
8. ASO/Velocity brace worn at all times

Home Exercise Program at D/C:

1. Toe raises, double and/or single
2. Hip 3-way against resistance band in standing
3. Pain free lunges frontal and sagittal planes
4. Anterior and medial step downs
5. Pain free ambulation, bicycling, jogging, stairmaster, etc…
6. Return to sport as per physician recommendation
7. Icing as necessary
8. ASO/Velocity brace worn for all sporting activities until discharged by physician.

FINAL ASSESSMENT FORM

Modified Brostrom Procedure/ or Peroneal Tendon Repair

Patient Name:_____ DOB:___/___/___ **D/C DATE:___/___/___**

TEST	SCORE

		INITIAL DATE	D/C DATE
1. Average Pain Rating on 0 to 10 scale			
0-3 out of 10	4points		
4-6 out of 10	3points		
7-8 out of 10	2points	_____	_____
9-10 out of 10	1point		
2. Single Leg Balance (Eyes Open)			
Within 5 seconds of uninvolved	3points		
Within 10 seconds of uninvolved	2points		
Within 15 or more seconds	1point	_____	_____
Unable to perform	0points		
3. Single Leg Stance With Opposite Lower Extremity Reach (Measure from toe of stance/involved foot to toe of reach/uninvolved foot)			
Within 1 inch of uninvolved	3points		
Within 3 inches of uninvolved	2points		
Within 5 or more inches	1point	_____	_____
Unable to perform	0points		
4. Forward Lunge (Measure from toe of stance/uninvolved foot to toe of lunging/involved foot)			
Within 1 inch of uninvolved	3points		
Within 3 inches of uninvolved	2points		
Within 5 or more inches	1point	_____	_____
Unable to perform	0points		
5. Lateral Lunge (Measure from start line to lateral aspect of lunging foot)			
Within 1 inch of uninvolved	3points		
Within 3 inches of uninvolved	2points		
Within 5 or more inches	1point	_____	_____
Unable to perform	0points		
6. Medial Step Downs (Measure # of successful repetitions in 30 seconds):			
Within 5 reps of uninvolved	3points		
Within 8 reps of uninvolved	2points		
Within 10 reps of uninvolved	1point	_____	_____
Unable to perform	0points		
7. Rate Overall Control of Medial Step Downs:			
Excellent	3points		
Fair	2points		
Poor	1point	_____	_____
Unable to perform	0points		
Totals:		**_____/22**	**_____/22**

Sorensen 02.2024