



Northern Arizona ORTHOPAEDICS

Outcomes by HOPCo®

Blake Obrock, DO

ORTHOPAEDIC SPORTS MEDICINE

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QUADRICEP/PATELLAR TENDON RUPTURE- REPAIR PROTOCOL

Brace locked at 0 degrees for ambulation for 6-8 weeks with use of bilateral axillary crutches.

Initial Visit: Dressing change

Start P.T. at 2-3 weeks

May start WBAT with brace locked in extension

At 2-3 weeks home E-stim unit (if needed) for quadriceps muscle re-ed.

At 3 weeks pt can WBAT with brace locked in extension.

At 6 weeks typically can open the brace 0-90 degrees with ambulation with bilateral axillary crutches, unless otherwise specified.

PRECAUTIONS: Avoid impact loads/sudden activation (eccentric load)

GOALS:

☑ A/AAROM 90-100 degrees by 6 weeks, 0-110 degrees by week 8, 0-130 degrees by week 10, and 0-135 degrees by week 12.

Week 1-4

No active ROM knee extension.

☑ PROM knee ext to 0 degrees

☑ AROM/AAROM knee flexion – very gently – Dr. Obrock will define the safe range at the time of surgery.

☑ Gradually unlock brace for sitting as PROM knee flexion improves

Exercises:

☑ Ankle pumps



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- ☑ Patellar mobilizations
- ☑ Hamstring stretch sitting
- ☑ Gastroc stretch with towel
- ☑ Heelslides
- ☑ Quad sets – may add E-stim for re-education at 2-3 weeks upon MD approval
- ☑ Patellar mobilization – all directions.
- ☑ SLR all directions, active assistive flexion- start at 3rd post-op week – do not allow lag – use e-stim as needed after 2-3 weeks. If unable to achieve full extension, perform SLR in knee immobilizer

Week 5:

Gradually increase A/AAROM knee flexion

Exercises:

- ☑ Submaximal multi-angle isometrics (30-50% only)
- ☑ Continue knee flexion ROM – rocking chair at home
- ☑ Active SLR 4 way – no weight for flexion – watch for extensor lag – increase resistance for hip abduction, adduction, and extension.

Add aquatic therapy if available. Move slowly so water is assistive and not resistive

Aquatic therapy exercises:

- ☑ With knee submerged in water, knee dangling at 80-90 degrees – slowly actively extend knee to 0 degrees.
- ☑ Water walking in chest deep water
- ☑ SLR 4 way in the water with knee straight



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☑ Knee flexion in water

Week 6-8:

Brace – unlock for sitting to 90 degrees at 6 weeks. If quad control sufficient at 8 weeks unlock brace 0-90 degrees for ambulation with bilateral axillary crutches and gradually open brace as ROM improves. Progress to ambulation at 8 weeks with no crutches as quadriceps strength allows. D/C crutches and brace at 8-12 weeks depending on patient's quadriceps control. Emphasize frequent ROM exercises

Goals – Gradually increase P/A/AAROM during weeks 6-8

Exercises:

- ☑ Total gym semi squats level 3-4
- ☑ Gradually increase weight on all SLR, if no lag present
- ☑ Week 6 – bike (begin with rocking and progress to full revolutions)
- ☑ Week 6 – Closed chain terminal knee extension with theraband
- ☑ Week 6 – SAQ (AROM)
- ☑ Week 7 – LAQ (AROM)
- ☑ Week 8 – SAQ (gradually increase resistance)
- ☑ Week 8 – LAQ (gradually increase resistance)
- ☑ Week 8 – weight shifts
- ☑ Week 8 – balance master and/or BAPS – with bilateral LE weight bearing
- ☑ Week 8 – cones

Week 9-10:

Exercises:



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- ☑ Total gym level 5-6
- ☑ Bilateral leg press – concentric only – no significant load work until 12 weeks.
- ☑ Weight shift on minitramp
- ☑ Toe rises
- ☑ Treadmill – Concentrate on pattern with eccentric knee control

Week 11-16:

Exercises:

- ☑ Leg press – Gradually increase weight and begin unilateral leg press at week 12
- ☑ Wall squats
- ☑ Balance activities: unilateral stance eyes open and closed, balance master
- ☑ Standing minisquats
- ☑ Step-ups – start concentrically, 2” to start and progress as tolerated
- ☑ Week 16 – lunges
- ☑ Week 16 – stairclimber/elliptical machine

CRITERIA TO START RUNNING PROGRAM

- ☑ Patient is able to walk with a normal gait pattern for at least 20 minutes without symptoms and performs ADL’s painfree
- ☑ ROM is equal to uninvolved side, or at least 0-125 degrees
- ☑ Hamstring and quadriceps strength is 70% of the uninvolved side isokinetically
- ☑ Patient without pain, edema, crepitus, or giving-way