Bone Substitute Injection (Calcium Phosphate Bone Void Filler) Rehabilitation Protocol

Description of Procedure: An injectable bone slurry is inserted into the region of bone marrow edema using fluoroscopy.

Safety Warning: Avoid rapid progression of activity to decrease likelihood of creating subsequent bone edema.

Restrictions: No running, jumping, squatting, lunges, stairs or inclines for at least two months post-operatively.

Phase I (Weeks 0 to 6)

Weight Bearing
- Foot flat for balance
- Two crutches until first post-op visit
- Progress gradually to full-weight bearing as tolerated after first visit

Brace
- Brace is worn until independent straight leg raise can be performed without extension lag

Range of Motion
- Full active range of motion

Therapeutic Exercise
- Prone hangs, heel props, quad sets, straight leg raises (SLR), hamstring isometrics; complete exercises in brace if quad control is inadequate
- Core proximal program
- Normalize gait
- Functional electrical stimulation (FES) biofeedback as needed
- Incorporate use of stationary bike (high seat, low resistance) and patellar mobilization exercises after suture/staple removal

Phase II (Weeks 6 to 12)

Weight Bearing
- Full weight bearing with normalized gait pattern; no limping

Brace
- None

Range of Motion
- Full active range of motion

Therapeutic Exercise
- Progress bilateral closed chain strengthening using resistance less than patient’s body weight
- Progress to unilateral closed chain exercises
- Continue opened chain knee strengthening
Phase III (Week 12 to Month 9)

Weight Bearing
- Full with a normalized gait pattern

Brace
- None

Range of Motion
- Full active range of motion

Therapeutic Exercise
- Week 12 to Month 6
  - Advance bilateral and unilateral closed chain exercises with emphasis on concentric/eccentric control
  - Continue with biking, elliptical and treadmill
  - Progress balance activities
  - Form exercises for desired sport if no pain or effusion
  - Advance strength training
  - Initiate light jogging; start with two minute walk/two minute jog
  - Emphasize sport-specific training

Progression back to sport is dependent on case per case basis and determined by Dr. Farr. If pain or swelling occurs patient is expected to stop causative activity and follow-up with our office.

Leg extension exercises with resistance are not allowed indefinitely.