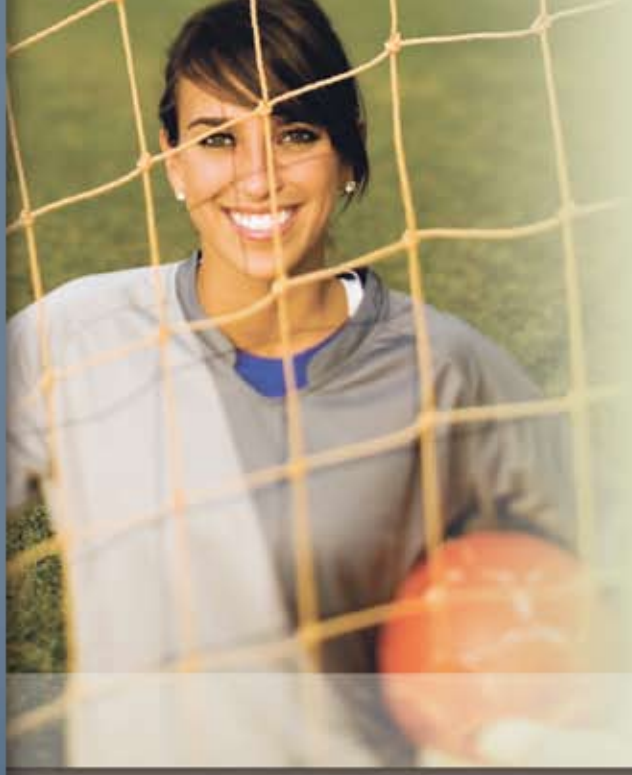

Gait re-training, manual therapy and strength training dramatically reduce young athlete's pain, enabling her to continue competitive sports

Patient Profile

Patient: 12-year-old female

Activities: Travel soccer team – soccer practice 2x/wk for 1.5 hrs, soccer games 1-2x/wk; squash 2-3x/wk for 1 hr.

Complaint: The patient reported left groin pain for 2 weeks, constant bilateral ankle pain (L>R), and bilateral knee pain for 4-6 weeks (L>R). The patient reported left groin pain as high as 7-8/10, but wrapping her left groin for soccer practice and games helped with the pain. The patient reported continued sesamoid pain with excessive activity (i.e. running).

Medical History: Bilateral first ray sesamoid fractures

Functional Level: The patient scored her functional level at 7-8/10. She reported difficulty with ascending stairs and hills, sitting "Indian style," and running.

Physical Exam: *Manual Muscle Test*

	Right AROM	Left AROM	Right MMT	Left MMT
Hip flexion	0˚-129˚	0˚-118˚ with pain	4+/5	4 -/5 with pain
Hip extension	0˚-15˚	0˚-15˚	4+/5	4/5
Hip abduction			5/5	5/5
Hip adduction			5/5	4+/5 with pain
Hip internal rotation	0˚-26˚	0˚-24˚ with pain	4+/5	4/5 with pain
Hip external rotation	0˚-24˚	0˚-26˚	5/5	4+/5
Ankle plantarflexion			4+/5	4/5

Tenderness to Palpation (TTP): Bilateral post tibialis, peroneals, iliotibial band (ITB), and adductors (all L>R), left anttibialis, proximal med and lat gastrocnemius, significant TTP to left adductors.

SLR: R = 0-96˚ L = 0-94˚

Posture: Bilateral subtalar joint (STJ) pronation in WB, bilateral genu recurvatum (R>L).

Gait: Immediately prior to heel strike, the patient inverts her foot, and achieves push-off (PO) from digits 2-4, not digit 1. This altered PO was developed to avoid pain when she had her sesamoid fractures.

Diagnosis: Left hip flexor and adductor strain with concomitant bilateral patellofemoral pain syndrome (PFPS). The PFPS was probably due to poor foot biomechanics, and the increased pain on the left side due to improper push-off during gait.

Treatment Program

During the initial visit, the therapist recommended over-the-counter foot orthotics to help control pronation. Gait training was used to correct her PO. Adductor stretches (30 sec x 3) and left heel raises (10 x 3) were given for her home exercise program, all to be done 2x/day.

By the patient's third session, she rated her overall hip, knee, and ankle pain to have decreased to a 2-3/10, which increased to 5/10 with sports. The patient was walking with increased PO from digit 1. By the patient's fifth visit, her pain with higher-level activities was self-rated at a 3/10.

- *Therapeutic Exercises*: Hip and knee strengthening exercises were utilized, including:
- Backwards walking on the treadmill
- Wall squats
- Hip hiking (to increase glut med strength)

Ankle strengthening using theraband (dorsiflesion, inversion, and eversion 10x3) was added to her home exercise program on the second visit, in addition to the heel raises assigned during the initial visit.

Manual treatment: Included soft tissue mobilization to her left adductors, ITB, hip flexors and psoas release.

Results

As of her last visit (5th), the patient was doing well overall. She continued to experience some increased pain with sports. The patient was going on vacation, and was to continue with her home exercise program while away. The patient was to call if she had any questions, had increased symptoms, or needed guidance. She is to return for therapy after her vacation.

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