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Background & Purpose

- Idiopathic toe-walking (ITW) describes patients who walk bearing most weight through their forefoot, in the absence of any known cause.1
- Developmental coordination disorder (DCD) is a chronic condition involving impairments in gross motor, postural, and fine motor performance and affects the performance of movements necessary for daily living and academic tasks.2
- Physical therapy intervention has been shown to result in improvements for patients with ITW with DCD.3 However, there are no known studies that investigate the physical therapy intervention for patients with a diagnosis of both ITW and DCD.
- The purpose of this case report was to describe the comprehensive physical therapy management of a patient with a clinical diagnosis of DCD and ITW.

Case Description

- Eight-year-old boy referred to outpatient physical therapy for concerns of toe-walking
- Presented with a family history of toe-walking
- Walked and ran 100% of the time on his forefoot since the age of two
- Unable to walk up and down the stairs without scooting or hopping
- First time he had received physical therapy for this diagnosis
- Was also seeing an occupational therapist for fine motor coordination deficits and a speech language pathologist for a speech impediment

Interventions

- **Stretching**
  - Gastrocnemius stretching home program performed everyday
  - Hamstring stretching home program performed everyday
  - Parent educated on importance of stretching and methods to motivate patient

- **Strengthening**
  - BOSU squats to throw weighted balls (Figure 2)
  - Jumping down from elevated surfaces
  - Trunk strengthening through perturbations

- **Task Specific Training**
  - Stair negotiation ascent and descent (Figure 4)
  - Dynamic and static balance on various surfaces
  - Trunk stability with perturbations (Figure 3)
  - Squat mechanics

Outcomes

- **Static Balance**
  - Initial Evaluation
  - Week Seven

- **Dynamic Balance**
  - Initial Evaluation
  - Week Seven

- **Reciprocal Stair Negotiation**
  - Initial Evaluation
  - Week Seven

Conclusions

- Functional mobility improved with task-specific training based on clinical performance and the mother’s reports.
- A stretching program may have helped to improve hamstring and gastrocnemius/soleus complex flexibility.
- Beginning with a task-specific training and stretching program may have helped to establish patient and parent rapport for serial casting.
- Task-specific training and a conservative stretching program may be beneficial when treating a patient with a clinical diagnosis of DCD and ITW.
- Future studies may consider investigating task specific interventions for a larger population of patients with a concurrent diagnosis of DCD and ITW.

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References