



The Children's Hospital



CGMA

Center for Gait and Movement Analysis

PT21: Phenol injection

Indications: A large proximal muscle or muscle group with a high degree of spasticity that interferes with function, comfort, care or has the potential to lead to skeletal deformity.

Procedure: Intramuscular injection of Phenol into spastic and dystonic muscles at either the motor point or the motor nerve. Identification of the desired muscle requires electrical stimulation of the selected muscle or nerve. This may be slightly uncomfortable.

Casting: None. May be used as an adjunctive intervention

Expected Duration of Effect: Approximately 3-6 months

Precautions: Avoid aggressive stretching during first week after injection to avoid muscle pulls. There is a risk of reduced sensation if a sensory nerve is affected by injection.

Contraindications:

-sensitivity to injected medications

Physical Therapy Goals:

1. Improve flexibility of the injected muscle working toward carry over to posture and gait.
2. Increase strength and endurance in the antagonist muscles.
3. Improve motor patterns with improved flexibility, increased joint range of motion and changes in motor unit activation.
4. Improve balance during stance and ambulation.
5. Improve orthotic wear and seating/positioning.

Physical Therapy Treatment:

1. Intensive stretching of injected muscles after the first week.
2. Neuromuscular re-education for more efficient movement patterns.
3. Strength and endurance training of antagonist muscles using active assistive, active and progressive resistive exercise. Consider using electrical stimulation for strengthening.
4. In the ambulatory patient, gait training focusing on improved foot position, stride length, velocity and foot progression angle. Correct seating position and adapt transfer techniques for non-ambulatory patients.
5. Balance training activities to accommodate to new muscle tone.
6. Treatment may include surface EMG to improve motor and functional movement patterns by controlling amplitude control of several muscles at once.
7. Treatment may include Functional Electrical Stimulation to improve gait patterns in patients with significant muscle weakness.
8. Evaluate positioning in orthotics and seating equipment and make recommendations for alterations if appropriate.
9. Functional training in activities of daily living including mobility training, gait training, and stairs training.
10. Biofeedback training to increase firing of some muscles and inhibit firing in others.

Physical Therapy Home Exercise Program:

1. Passive, active assistive and active lower extremity range of motion. Strengthening of injected muscles and antagonists.
2. Mobility training capitalizing on improved muscle tone addressing current functional limitations.
3. Practice walking with upright posture, neutral pelvis and with full knee extension at terminal swing.
4. Positioning to work on stretching and use of splints and bivalved casts as indicated.
5. Use of adaptive equipment especially immobilizers and wedges to increase range of motion.

Special Considerations:

- Occasionally there is an initial decrease in function due to a period of adaptation to new muscle length. Function generally improves when the child accommodates to the new muscle length.
- Discomfort at the injection site may last for 24-48 hours. Check with referring MD for specifics.
- Interventions will vary with level of mobility of the child. More mobile children are more likely to benefit from patient/client-related instruction and direct intervention.

When multiple procedures are performed at the same surgical event, the post-op physical therapy care needs to default to the most conservative time frames and guidelines.

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