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Assessing the recovery of standing balance and gait following removal of a meningioma using the Feldenkrais Method of closed chain muscle contractions in standing and posture neutral positions

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The background of the study:

Most exercises do not facilitate early functional return of walking and standing on a hemiparetic lower extremity, particularly if the exercises are performed in positions other than standing. In this case study, we report the combined use of the Feldenkrais Method, active therapeutic movement (ATM2) in the standing position, postural control, and gait re-education in a patient who had a meningioma removed and was discharged from physical therapy at 3 months post surgery.

The methods used:

The patient's left lower extremity strength was assessed using manual muscle testing procedures and graded using the Medical Research Council (MRC) scale. A one minute single leg standing test was performed on the hemiparetic leg and three physical therapists independently observed and analyzed the patient's gait pattern. The Feldenkrais Functional Integration (FI) lesson was designed to provide weight bearing in the supine position (false floor), in posture neutral on a standing treatment table (ATM2), and then free standing. Measurements were taken before and after the FI standing lesson and compared with previous discharge data.

The results obtained:

Manual muscle testing demonstrated a change from a 3-/5 to an average of 4/5 in all muscles tested. Single leg standing on the hemiparetic leg increased from 3 seconds to 34 seconds with better balance control. Gait analysis demonstrated an immediate improvement in his trandelenberg, weight shifting during stance with better control of his foot drop at heel strike. A video analysis will be used to compare the observed changes.

The conclusion reached:

A Feldenkrais lesson consisting of a well organized sequenced program of closed chain movements in simulated and actual standing positions can improve strength, balance, and gait efficiency by engaging neural processes and motor engrams that were inhibited following surgery and were not accessible by traditional methods of exercise.