Rotationplasty Rehabilitation Protocol: A Complex Case Report

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Background and Purpose: Rotationplasty is a rare complex limb sparing surgery that creates opportunity for physical therapists to develop a unique rehabilitation plan focusing on functional mobility and independence. To date, there is no comprehensive rehabilitation-specific protocol documented in the literature for individuals who have undergone rotationplasty. This case report describes the first novel comprehensive rehabilitation protocol, interventional strategies, and optimal functional outcome of a patient who underwent rotationplasty.

Case Description: Patient is a 20-year-old male with history of high-grade conventional osteosarcoma who underwent numerous limb-salvage procedures resulting in pain and debility necessitating rotationplasty. Rehabilitation protocol and focused physical therapy interventions were implemented pre and post-surgery based on functional limitations.

Outcomes: The Toronto Extremity Salvage Score (TESS), Musculoskeletal Tumor Society Assessment (MSTS), Timed Up and Go (TUG), range of motion and strength testing of the affected lower extremity all demonstrated significant improvement from pre-rotationplasty, post-surgery and one year follow-up. A 41.8% improvement in TESS outcome was found from post-surgery to one year follow-up. The MSTS showed a 60% improvement from pre-surgery to one year follow-up. TUG score improved by 2.5 seconds with no assistive device by final discharge. The patient met all therapy goals and reported no functional limitations at discharge. He was able to obtain a manual laborious occupation after completing physical therapy plan of care.

Discussion: Implementation of a rehabilitation protocol for this unique population guides clinicians’ decision making while developing congruency between providers. This protocol paired with targeted interventions
promotes a successful patient outcome and aids as a framework for clinicians to be used treating this complex population.

**Clinical Merit:** The findings from this case report suggest the importance of a rehabilitation guideline in order to improve communication across healthcare provider teams in order to optimize patient functional outcome and surgical recovery.

**Bibliography:**


Future Conferences:

This work has been submitted for platform and poster presentations at APTA CSM February 2020. Acceptance is pending.