Rehabilitation Challenges in Patient with Dwarfism Status Post Left Total Hip Replacement
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Abstract
Case Diagnosis: A 32-year-old female with history of Dwarfism status post left total hip arthroplasty.
Case Description: A 32-year-old female with history of Dwarfism underwent left total hip arthroplasty via posterior approach. Patient was placed on toe-touch weight bearing due to intra-operative prosthetic fracture. Patient underwent a week acute in-patient rehab course. This case posed to be challenging from a rehab perspective due to the patient's short stature (3 ft, 2 inches, 106 lbs) in combination with her weight-bearing restrictions.
Discussion: Patient required unique modifications with regards to transfers, toileting, activities of daily living, and gait training. These tasks were particularly challenging due to her weight bearing restrictions. Push-up breaks under slide-board transfers. Modified bed-side commode with height of 10 inches from floor to seat was used for toileting. A wider pediatric gait trainer with 12-inch bilateral platform attachments was used to aid in ambulation. Other special equipment patient required included custom sock aid, long handled sponge, and custom fabricated toilet aid.

Case Report
The patient was a 32-year-old female with history of achondroplasia type dwarfism who had progressive worsening of left hip osteoarthritis. Patient was reported to have failed conservative management and thus proceeded to undergo elective hip replacement.
- Patient underwent left total hip arthroplasty via posterior approach. The procedure was complicated by an intra-operative prosthetic fracture which was stabilized by cerclage wire.
- Patient was placed on toe-touch weight bearing precautions for 6 weeks post-operatively due to the intra-operative fracture.
- Acute care hospital stay was significant for blood loss anemia requiring a transfusion.
- After medical stabilization, patient was transferred to acute in-patient rehabilitation hospital for functional upgrading.
- Patient underwent a 3-week acute in-patient rehabilitation program consisting primarily of physical and occupational therapy.
- This case proved to be a unique challenge from a rehabilitation perspective due to the patient's small stature and body habitus (3 ft, 2 inches, 106 lbs) in combination with her weight bearing restrictions.
- This case provides information regarding the patient's ability to learn safe techniques with personal equipment that allowed her to function at supervision to modified independent after acute rehabilitation with an intensive interdisciplinary team approach.

Discussion
The patient required unique modifications with regards to transfers, toileting, activities of daily living, and gait training. These were particularly challenging due to patient's toe-touch weight bearing restrictions. The modifications implemented and functional independence measurement (FIM) outcomes follow:
- The patient's FIM items at admission and at discharge are noted in Figure 1 line chart, arranged in decreasing difficulty order from left to right. Overall FIM gain was 17.
- Push-up brake was inserted under slide-board to aid accommodation for short arms during transfers.
- Modified bed-side commode with height of 10 inches from floor to seat was used for toileting (see Figure 2).
- Wider pediatric gait trainer with 12-inch bilateral platform attachments used for ambulation (see Figure 3).
- Custom sock aid, long handled sponge, and custom fabricated toilet aid used in occupational therapy.

Conclusion
Achondroplasia is a common form of dwarfism.
- This case provided interesting insight with regards to challenges associated in patients with dwarfism.
- With the therapeutic modifications applied, the patient was successfully discharged home independently.

References