Hip muscle strengthening and balance for a patient with Bipolar Disorder following hip fracture: A Case Report

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Introduction

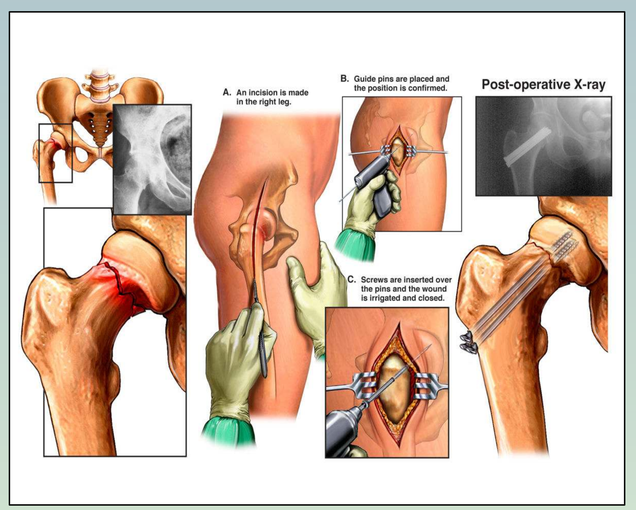
- Hip fractures result in more than 258,000 hospital admissions annually for those aged 65 and older.
- Mortality rate following hip fracture is 10-20%.
- Among survivors, half will have longstanding disability, only 1/3 will return home, and 19-27% will remain in long term care.
- Six percent will experience a second fracture within four years.
- Cost for treatment for hip fractures in the US: $10.3-15.2 billion/year
- Over 95% of hip fractures occur as a result of a fall.
- Direct medical costs for falls in 2013 reached $34 billion.
- Average hospital cost for a fall injury is $35,000.
- Neuropsychiatric symptoms negatively affect functional outcomes in patients with hip fractures.

Patient History

- 84 year old female
- Bipolar Disorder (BD)
- High fall risk; history of falls, urinary incontinence, polypharmacy, psychotropic and pain medications.

Fell on her right side, resulting in right subcapital femur fracture.

- Arrived at Skilled Nursing Facility
  - Impaired Range of Motion
  - Pain with all movements: 9/10
  - Fearful
  - Limited bed mobility, transfers
  - Unable to ambulate
  - Impaired sitting balance



Subcapital femur fracture from Scientific & Medical ART (SMART) Imagebase

Interventions

- Patient received training in bed mobility, transfers, gait, and balance.
- Gait training progressed as strength and ROM improved. Transition from front-wheeled walker to rolling walker - day 19
- Balance training was made increasingly more difficult.
- Static sitting balance → dynamic sitting → static standing → dynamic standing; (reaching outside of base of support, altering surfaces, head turns, varying speed, navigating obstacles)
- Patient was often anxious and concerned with her progress. Self efficacy training was used throughout her plan of care to increase her confidence and help alleviate her fears, as per guidelines in table below.

Mechanisms for enhancing self-efficacy

Performance Accomplishments: Based on the patient's personal experiences. Favorable outcomes boost patient's self-efficacy, while negative outcomes may cause the opposite effect.

- Set feasible and realistic goals,
- Break up large tasks into smaller components, and
- Begin with tasks that the patient is sure s/he is able to do in order to avoid repeated failures and decreases in feelings of self-efficacy.

Vicarious experience: Based on others' successes.

- Point out another person with similar experience or in a similar position to that of the patient who has been successful to serve as a model for that patient, in order to strengthen the patient's ideas about his/her own capabilities.

Persuasive communication:

- Provide instructions, suggestions, and advice to the patient, which can have a positive effect on the patient's beliefs about his/her capabilities.
- Promote realistic objectives, as opposed to unachievable goals.

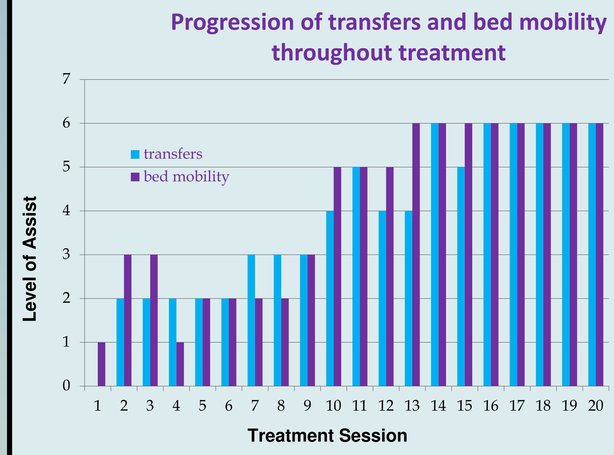
Physiological state:

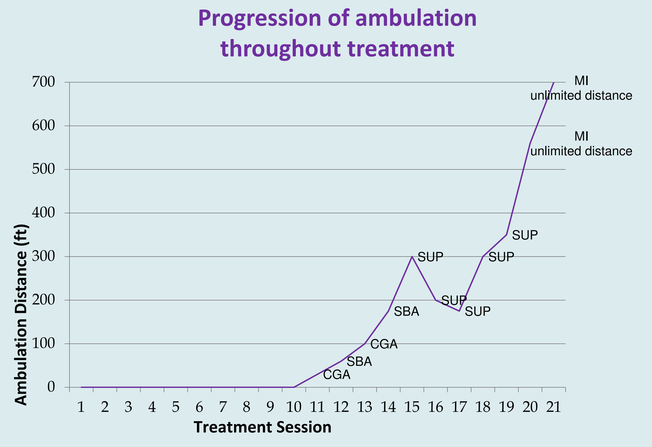
- Alter a patient's physiological reactions or the way that the patient interprets his/her reactions.
- Educate patient on normal reaction to exercise, for example, or be that some pain and fatigue is normal, instead of being allowed to perceive certain physiological reactions as a sign of susceptibility or weakness.

Taal E, Rasker J, Wiegman O. Patient education and self-management in the rheumatic diseases: A self-efficacy approach. *Arthritis Care and Res*. June 1996;9(3). Available at: http://core.ac.uk/download/pdf/11474722.pdf.

Outcomes

	Initial Evaluation	Discharge
Visual Analog Scale	Right hip pain; 1/10 at rest, 9/10 with any movement of the right hip	Right hip pain; 0/10 at rest, 4/10 with weight bearing
Functional Mobility	• Bed mobility: Max assist • Transfers: Max assist • Gait (level surfaces): Max assist	• Bed mobility: Independent • Transfers: modified independent; no physical assistance required, may take extra time to perform. • Gait (level surfaces): modified independent; requires use of rolling walker, ambulates unlimited distances
Balance	• Static Sitting: Good-/Fair+ • Dynamic Sitting: Fair • Static Standing: Unable • Dynamic Standing: Unable	• Static Sitting: Good • Dynamic Sitting: Good • Static Standing: Good-/Fair+ • Dynamic Standing: Good-/Fair+
Functional Independence Measure (FIM)	Mobility Items: • Bed, Chair, Wheelchair - 2 • Toilet – did not test • Tub or shower – did not test Locomotion: • Walking/Wheelchair - 1 • Stairs – did not test; patient lived in ALF.	Mobility Items: • Bed, Chair, Wheelchair - 6 • Toilet – 6 • Tub or shower – 5 Locomotion: • Walking/Wheelchair - 6 • Stairs – did not test





Discussion

- The patient demonstrated improvements in all areas of mobility following physical therapy treatment.
- Positive outcomes may have been positively influenced by physical therapy and the inclusion of techniques to enhance self efficacy.
- There is no single optimal method for treating patients with hip fractures; it is important to consider the individual patient and address risk for future falls. Mental health factors must be taken into account, as they can impact treatment and outcomes.
- Future studies should investigate the effects of bipolar disorder on patients' self-efficacy and PT outcomes, as the number of those with this diagnosis continues to increase along with the aging population.

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