


Oncology Basics

Occupational Therapy Evaluation and Treatment of the Cancer Patient - A Case Based Approach

Nicole Kasven-Gonzalez, MA, OTR/L, CLT
Stacey Mislavsky, MS, OTR/L, CEIM
June 1, 2013

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Objectives

Through case study format:

1. Review the unique role of occupational therapy in oncology
2. Discuss unique evaluation and treatment interventions when working with patients in an oncology setting
3. Discuss special considerations and common side effects to take into account when treating patients with a cancer diagnosis
4. Discuss examples of modified occupational therapy approaches to achieve functional improvement and patient-centered care



Role of Occupational Therapy in Oncology ¹

- ADL performance through activity and environment adaptation
- Lifestyle management
- Sleep and fatigue management
- Cognitive strategies
- Therapeutic exercise and positioning
- Lymphedema management




Adult Bone Marrow Transplant (BMT) Case



Primary Diagnosis

- Diffuse Large B Cell Lymphoma (DLBCL)
 - Most common type of lymphoma
 - Comprising about 30-40% of NHLs²
 - Median age of those affected is 57 years old, with a range of 10 to 88 years²
 - May arise in lymph nodes or in extranodal sites, including the GI tract, testes, thyroid, skin, breast, CNS, or bone
 - May be localized or spread throughout the body



Course of Disease Progression


Epigastric Pain 11/2010

Extensive disease in abdomen 12/2010

Lost 6-8 pounds 1/2011

Received chemotherapy 5/2011 and 9/2011

Admitted for Allogeneic SCT 5/2012




Past Medical and Social History

PMH:

- Decreased hearing left side (since child)
- Hyperlipidemia
- Mastoid surgery (as child)
- Thyroid cyst removal (age 18)
- Appendectomy (2006)
- Right knee meniscus tear and repair


Social History:

- Lives with wife and 21 year old daughter in private home with stairs
- Occupation: machinist for plane parts

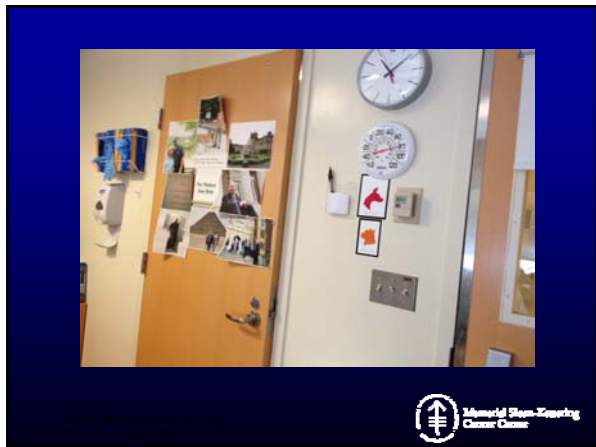


Cancer Specific Treatment

- Standard treatment for DLBCL^{2,3,4}
– R CHOP
- Frequent Blood/Platelet transfusions
- Total Body Irradiation (TBI)
- Allogeneic Hemopoietic Stem Cell Transplant from double umbilical cords graft









MSKCC BMT Evaluation

- Basic ADL assessment
 - Canadian Occupational Performance Measure (COPM)^{5,6}
- ROM/MMT/coordination/balance
- Cognition
 - Montreal Cognitive Assessment (MOCA)^{7,8}



Occupational Therapy Evaluation

| OT Evaluation Completed Day -7 transplant | |
|--|---|
| UE Status | Right Handed UE AROM WNL UE Strength 5/5 Sensation/Tone/Coordination Intact |
| Balance | Good |
| Endurance | Good |
| ADL's | Independent with Feeding, Grooming, UE/LE dressing and bathing, toileting, and functional mobility in room and hallway |




Available at <http://www.mocatest.org/permission.asp>,
Accessed April 1, 2013




Initial Montreal Cognitive Assessment

| Total Score 27/30 | |
|-------------------|-----|
| Visuospatial | 5/5 |
| Naming | 3/3 |
| Attention | 6/6 |
| Language Repeat | 2/2 |
| Language Fluency | 0/1 |
| Abstraction | 2/2 |
| Delayed Recall | 3/5 |
| Orientation | 6/6 |



Initial Canadian Occupational Performance Measure Scores

| Problem Areas | Performance Scores (Total Score 9/10) | Satisfaction Scores (Total Score 9/10) |
|---------------------------------------|---------------------------------------|--|
| Exercising | 9/10 | 9/10 |
| Reading | 9/10 | 9/10 |
| E mailing | 9/10 | 9/10 |
| Communication with Friends and Family | 9/10 | 9/10 |



Occupational Therapy Plan of Care

- Followed 1x/week secondary to patient at risk for decline in BADL and cognition due to isolation, prolonged hospital stay, and treatment side effects
- Discharge recommendation at initial evaluation - no further OT needs




Occupational Therapy Acute Care Goals

- Patient will tolerate OOB activity 70% of day to maintain ADL participation.
- Patient will participate in 30 minutes of leisure tasks daily to maintain cognition and mood during prolonged hospital stay.
- Patient will communicate via phone or email to family to maintain mood during hospital stay due to isolation.
- Patient will be educated and I with memory compensation techniques to increase ease with ADL.



Precautions/Special Considerations for Bone Marrow Transplant Patients⁴

- Protective/Isolation
- Total body irradiation
- Low platelets
- Low hemoglobin
- Monitoring vitals during chemotherapy
- Graft vs. Host Disease
- Decreased functional endurance
- Decreased mood/anxiety
- Lines/tubes (TLC, Foley, multiple IV's)









Occupational Therapy Treatment Interventions

- Cognitive Retraining
 - Compensatory/remediation
- ADL Training
 - Modifying shower routine
- Energy Conservation
 - Pacing
- Neuro re education
 - Positioning/Stretches




Discharge Status

| Discharge Summary (Completed 2 days prior to discharge) | |
|---|--|
| UE Status | UE AROM WNL UE Strength 4/5 Sensation Impaired Tone/Coordination Intact |
| Balance | Good |
| Endurance | Fair |
| ADL's | Independent with Feeding, Grooming, UE/LE dressing and bathing, toileting, and functional mobility in room and hallway |




Montreal Cognitive Assessment Discharge Status

| Total Score 27/30 | |
|--------------------------|-----|
| Visuospatial | 5/5 |
| Naming | 3/3 |
| Attention | 5/6 |
| Language Repeat | 2/2 |
| Language Fluency | 0/1 |
| Abstraction | 2/2 |
| Delayed Recall | 4/5 |
| Orientation | 6/6 |




Canadian Occupational Therapy Measure Discharge Status

| Problem Area | Performance Score (Total Score 4/5) | Satisfaction Score (Total Score 4/5) |
|---------------------------------------|--|---|
| Exercising | 5 | 5 |
| Emailing | 4 | 4 |
| Reading | 1 | 1 |
| Communication with friends and family | 8 | 8 |



Billing

- MOCA billed under *Cognitive Retraining* when completed for re-assessment
- COPM billed under *Self Care*



Follow up Recommendations

- Discharged home with wife
- Shower chair was ordered
- Patient trained in energy conservation techniques to increase ADL participation
- Recommended outpatient OT to work on memory, attention, concentration, and neuropathy in finger tips



In Summary:

- Occupational therapy has a unique role in oncology and working with BMT patients
- There are special considerations and common side effects to take into account to safely treat patients who undergo BMT



Pediatric Case



Role of Occupational Therapy in Pediatric Oncology

- ADL performance through activity and environment adaptation
- Participation in play
- Therapeutic exercise and positioning
- Sensory integration
- Fine and gross motor coordination activities
- Cognitive strategies
- Family/ caregiver education

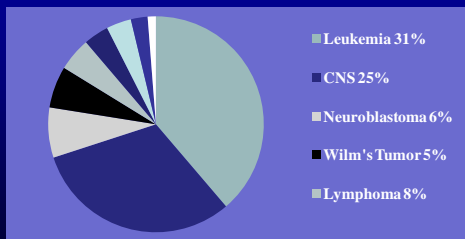


Primary Diagnosis

- Medulloblastoma^{11, 12}
 - Classified as a primitive neuro-ectodermal tumor (PNET)
 - Highly malignant brain tumor that originates in cerebellum or posterior fossa
 - Incidence between 35-100 cases per year
 - 20% of all childhood brain tumors
 - 50% of posterior fossa tumors




Common Cancers Among Children¹³




Posterior Fossa Syndrome^{14,15}

- Also known as cerebellar mutism
- Occurs in ~40% of patients following posterior fossa tumor resection
- Most commonly manifests 1-2 days post operatively, but can manifest up to one week post operatively
- Can last 1 day to several years.
- The severity of PFS varies from patient to patient



Onset of Symptoms

- At time of diagnosis patient was 6 years, 10 months old
- Patient's teacher noted
 - Worsening hand writing with RUE jerking
 - Unsteady gait
 - Patient complaint of frequent headaches
- MRI revealed 3cm mass in 4th ventricle
- Patient was admitted for subtotal resection of 4th ventricular mass



Past Medical and Social History

Past Medical History:

- No significant PMH


Social History:

- Residing with mother and grandmother in elevator apartment building
- At time of admission, in 1st Grade



Cancer Specific Treatment

- Subtotal resection and shunt placement completed at outside hospital prior to MSK admission
- Treatment received during MSK inpatient admission:
 - 10 cranio-spinal RT sessions
 - 35 whole brain RT sessions
 - 6 cycles of chemotherapy
- Post operative course complicated by:
 - Self-extubation in PICU
 - Worsening hydrocephalus requiring VP shunt placement which was later internalized




Occupational Therapy Profile

- According to the patients mother, prior to admission the patient enjoyed:
 - Video games
 - Music
 - Sports (basketball)
 - Playing with friends
 - Board games



Occupational Therapy Evaluation

| | |
|--|--|
| OT Evaluation completed post-op day #17 | |
| Vision | •No tracking, roving eye movements |
| UE Exam | •No AROM, WFL PROM •RUE flaccidity and LUE "waxy plasticity" •BLE clonus x 5 beats |
| Sensation | •No withdrawal to noxious stimuli |
| Functional Performance | •Dependent with all transfers and ADL |
| Cognition/Arousal | •PCS:3, Ranchos: Level I |



Occupational Therapy Plan Of Care

- Frequency: patient to be seen 4x/ week by OT
- Care plan addressed:
 - Functional transfers
 - BADL
 - Play skills
 - Cognition
 - ROM
 - Patient/caregiver education
- Discharge recommendation: Inpatient rehab pending progress, when stable for discharge



Occupational Therapy Acute Care Goals

- Pt. will track therapist in room 5/10 trials to increase visual perceptual skills in preparation for play.
- Family to be educated and independent with positioning to decrease risk of skin breakdown and maximize skin integrity.
- Pt. will tolerate OOB to chair x1 hour to maximize endurance and maximize participation in BADL.
- Pt. will demonstrate response to sensory stimuli 25% of time in preparation for play.
- Pt. will sit EOB ~1 minute with MAX A x 2 in preparation for BADL.



Occupational Therapy Treatment Interventions

- Sensory stimulation
 - Hot/ cold packs
 - Noxious stimuli
 - Snoezelen® cart
- Cognitive retraining^{16, 17}
 - Cause/effect toys
 - Following 1-step & multi-step commands
 - Sequencing tasks
- Caregiver HEP for PROM
 - PROM for BUE to prevent contractures




Occupational Therapy Treatment Interventions

- Neuromuscular re-education
 - NDT/Neuro IFRAH for pelvic stability to allow for distal mobility
 - BUE weight bearing
- Functional transfer training
 - Bed mobility
 - Bed to/from activity chair
 - Pediatric stander
- Positioning
 - Adaptive activity chair
 - Turning schedule




Occupational Therapy Treatment Interventions

- BADL
 - UE/LE dressing in supine/ semi-fowlers
 - Progressing to dressing while seated at edge of bed
- Play
 - Switch toys
 - Video games
 - Board games
- Fine/gross motor coordination activities
 - Unilateral reaching
 - Musical instruments
 - Basketball toss
 - Bilateral integration
 - Building with blocks
 - Board games




Precautions/Special Considerations for Medulloblastoma

- Craniotomy precautions for ~4 weeks post-operatively
- Falls risk
- Communication deficits
- Limited UE function
- Aspiration precautions
- Posterior Fossa Syndrome¹⁷
 - Frustration tolerance and agitation
- Patient received craniospinal RT daily for 3 months in addition to chemo x6 cycles
 - Increased lethargy post RT
 - OT treatment sessions scheduled prior to RT or at end of day to allow for rest break




Discharge Status

| | |
|---|---|
| Patient was discharged after 57 days in the hospital | |
| Vision | •Able to track in all fields •Right inattention |
| UE Exam | •Full AROM BUE •Impaired fine motor coordination •Ataxia RUE > LUE |
| Sensation | •Intact BUE/ BLE |
| Functional Performance | •Min A with bed mobility, sit <-> stand •Min A with UE dressing •Mod A with LE dressing •Mod A x2 for functional transfers |
| Cognition/ Arousal | •Able to follow simple 1-2 step commands •PCS: 13, Ranchos: Level IV |




Follow-up Recommendations

- Patient was discharged to a pediatric inpatient rehabilitation center for further rehabilitation
- Additional OT intervention was needed to address
 - BADL and functional transfer training
 - Therapeutic exercise
 - Cognition/vision
 - Fine motor coordination



In Summary

- Consider the effects of cancer-specific treatment throughout rehabilitation course for both adult and pediatric cancer patients
- Understanding a patient's cancer diagnosis and treatment-related side effects assist in developing an occupational therapy care plan to best meet the patient's rehabilitation needs



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