INTERPROFESSIONAL COLLABORATION
PROBLEM-BASED LEARNING MODULE
(Case Study with Facilitator Guide)

Jeremy

Jeremy is a 12-year old Native American male lacrosse star in seventh grade at a public middle school (off of the reservation), and reported to be successful academically. He lives on an Iroquois reservation with his grandparents who have custody and who are very supportive.

While on a recent ski excursion with his class he fell, hit his head, temporarily lost consciousness, and fractured his right pelvic ischium (stable type A1) and his right lateral tibial plateau (type1). His MRI indicated a full tear of the anterior cruciate ligament. He was admitted through the Emergency Department, underwent surgery, including an ORIF for his knee injuries, and was transferred to the Pediatric Unit. To date, no other tests were performed. A referral was made to physical therapy to begin ambulation. The orthopedic surgeon is expecting to discharge Jeremy in a week to follow him as an outpatient for an ACL reconstruction.

An itinerant special education teacher has been out to begin mandated education while Jeremy is in rehabilitation. Initial observations indicate that he is not reading or performing at a level needed for the work that Jeremy's teachers have prepared for him.

SPO Day 3 – During morning rounds, the Registered Nurse finds that Jeremy does not seem to recall the details of his accident. Although he is in pain, he does not want to take his medication (Vicodin) and wishes to remain in bed. He is very anxious to return to play lacrosse in the spring. During physical therapy sessions he tends to swear and be physically abusive. A friend has come to visit and mentioned that he found Jeremy more depressed than usual and is afraid he might think of suicide again. The friend indicates that Jeremy received some treatment in the past for his "mood swings."

1. What do we currently know about Jeremy? What else do we want to know about this scenario?
2. What is your plan for assessment?
3. How will you integrate your assessment information as an interprofessional team to form a realistic treatment plan/intervention(s)? What are the strengths in this case?
4. What is your professional role in the scenario?
5. What other referrals would you recommend?
6. As an interprofessional team, what are your goals for Jeremy and his family?

Facilitator Guide

General Information

Dx: Ski multiple fractures (pelvis, right lateral tibial plateau), ? mild TBI (head trauma) and associated sciatic injury (neuropraxia).

Primary Issues:

Medical: Pelvis fractures (stable vs unstable) (A1, avulsion, mostly in adolescent) & tibial plateau fractures (?new info):
(mechanism of injury, medical/ surgical management, stage of bone healing)
Sciatic nerve damage – types, sensori-motor deficits, peripheral nerve regeneration mechanism
Pain management/pharmacological issues:
Vicodan (hydrocodone plus acetaminophen), side effects (dizzy, orthostatic hypotension, confusion), implication for PT (treat at least 1 hour later)
(similar medication he could receive: Lortab, Percocet)

Psychosocial: Behavioral issues & management
Sports/ scholarship pressure
Previous suicide attempts (prevalence for age and cultural background)

Assessment: Screen cognitive deficits/concussion

Rx: Ambulation (according to pain at pelvis & 3 months NWB for tibial plateau #)
Exercise – precautions & contra-indications (protocol over time?)
Time of return to sports?

Secondary Issues:

Healing mechanism of bones vs other tissues
Support system/ environment
Adolescence → Adult management (pediatric ward!)
Crutch walking progression and stairs and snow/ice management
School- academics issues and follow-up

Resources:

Orthopedic courses material, references & labs
Sport medicine, Neuro-psychology
Pharmacology

Art Therapy

What assessments could be used to determine lethality vs. end of life issues
What circumstances and/or cultural factors contribute to unique needs of individuals?
Is the identified client/patient the only one in need or is it a family system issue?

EWas the work that the classroom teachers sent work that Jeremy was not in attendance for instruction?

Can Jeremy recall and summarize what was going on in his different classes?

Can he free write, recite multiplication tables, read directions automatic (memory activities)?

Music Therapy

Because music therapy can address goals in multiple domains, providing either primary or adjunctive support, the music therapist will target the goals for which there is evidence that music therapy interventions can be effective.

The first step in any music therapy assessment is to determine whether or not music provides motivation or assistance to a patient. The music Jeremy enjoys with his peers, his own preferred music, and potentially some music from his Native American culture will all be considered and/or used in the assessment.

If music is found to be a positive in this way for Jeremy, the music therapist (MT-BC) would likely target the cognitive and emotional domains. Getting Jeremy involved with his preferred music during the assessment period could (1) provide the team with additional information on any cognitive deficits and (2) allow the MT-BC to assess whether active music interventions provide an emotional focal point for Jeremy --- helping him moderate any lability and/or appropriate express strong emotions.

A music therapy assessment would also compare aspects of Jeremy's skills and behaviors with and without music interventions. For example, would the addition of preferred music that rhythmically complements his PT exercises help Jeremy control his outbursts? Would a music therapy session prior to his PT in which he is able to express stronger emotions through drumming or songwriting result in a more productive PT session?

Getting Jeremy involved in live music making would allow the team to evaluate such things as attention (sustained, divided, etc.), the ability to follow complex directions, or sequencing – while he was engaged in an enjoyable task (playing instruments, composing music, singing, etc.).

Integrating with the Team

One decision that the team will make is whether or not music therapy should occur in co-treatment, in stand-alone sessions, or both. For listening interventions (like the use of a playlist on an iPod or phone), the music therapist may initially consult and then not need

to be present at every session. For active music therapy interventions, the music therapist can work alone with the patient or integrate those interventions into another professional's work (as in "procedural support" or co-treatment).

Professional Role
Board-Certified Music Therapist, either full-time or PRN at the medical center.

Nursing

Pelvic fracture is a disruption of the bony structure of the pelvis, including the hip bone, sacrum and coccyx. The most common cause in elderly is a fall, but the most significant fractures involve high-energy forces such as a motor vehicle accident, cycling accidents, or a fall from significant height. Diagnosis is made on the basis of history, clinical features and special investigations usually including X-ray and CT. Because the pelvis cradles so many internal organs, pelvic fractures may produce significant internal bleeding which is invisible to the eye. Emergency treatment consists of advanced trauma life support management. After stabilization, the pelvis may be surgically reconstructed. Magnetic resonance imaging (MRI), nuclear magnetic resonance imaging (NMRI), or magnetic resonance tomography (MRT) is a medical imaging technique used in radiology to investigate the anatomy and physiology of the body in both health and disease. MRI scanners use strong magnetic fields and radio waves to form images of the body. The technique is widely used in hospitals for medical diagnosis, staging of disease and for follow-up without exposure to ionizing radiation. Applications in the musculoskeletal system include spinal imaging, assessment of joint disease and soft tissue tumors

Open reduction and internal fixation ORIF is a surgical procedure for a bone fracture. Surgery is often required for pelvic fractures. Many methods of pelvic stabilization are used including external fixation or internal fixation and traction. There are often other injuries associated with a pelvic fracture so the type of surgery involved must be thoroughly planned.

ACL Reconstruction: Anterior cruciate ligament reconstruction (ACL reconstruction) is a surgical tissue graft replacement of the anterior cruciate ligament, located in the knee, to restore its function after anterior cruciate ligament injury. The torn ligament is removed from the knee before the graft is inserted. The surgery is performed arthroscopically.

Physical abuse is an act of a person involving contact of another person intended to cause feelings of physical pain, injury, or other physical suffering or bodily harm. In most cases, children are the victims of physical abuse, but adults can also be victims, such as in a domestic context. Alternative terms sometimes used include physical assault or physical violence, and may also include sexual abuse. Physical abuse may involve more than one abuser and more than one victim.

Physically abused children are at risk for later interpersonal problems involving aggressive behavior, and adolescents are at a much greater risk for substance abuse. In addition, symptoms of depression, emotional distress, and suicidal ideation are also

common features of people who have been physically abused. Studies have also shown that children with a history of physical abuse may meet DSM-IV-TR criteria for posttraumatic stress disorder (PTSD).

Forms

- Striking, including forms such as punching, slapping, striking with an object, kicking, kneeing, and headbutting
- Pushing, pulling
- Shaking (particularly when infants are the victims)
- Excessive pinching on the body
- Tripping
- Strangling
- Drowning
- Sleep deprivation
- Exposure to cold, freezing
- Exposure to heat or radiation, burning
- Exposure to electric shock
- Placing in stress positions (tied or otherwise forced)
- Cutting or otherwise exposing somebody to something sharp
- Exposure to a dangerous animal
- Throwing or shooting a projectile
- Withholding food or medication
- Blinding a person or causing impairment of sight.
- Biting
- Eye poking

Treatment

Seeking treatment is unlikely for a majority of people that are physically abused, and the ones who are seeking treatment are usually under some form of legal constraint. The prevention and treatment options for physically abused children include: enhancing positive experiences early in the development of the parent-child relationship, as well as changing how parents teach, discipline, and attend to their children. Evidence-based interventions include cognitive behavioral therapy (CBT) as well as video-feedback interventions and child-parent psychodynamic psychotherapy; all of which specifically target anger patterns and distorted beliefs, and offer training and/or reflection, support, and modeling that focuses on parenting skills and expectations, as well as increasing empathy for the child by supporting the parent's taking the child's perspective. These forms of treatment may include training in social competence and management of daily demands in an effort to decrease parental stress, which is a known risk factor for physical abuse. Although these treatment and prevention strategies are to help children and parents of children who have been abused, some of these methods can also be applied to adults who have physically abused.[3]

Depression is a state of low mood and aversion to activity that can affect a person's thoughts, behavior, feelings and sense of well-being.[1][2] People with depressed mood can feel sad, anxious, empty, hopeless, helpless, worthless, guilty, irritable or restless. They may lose interest in activities that were once pleasurable, experience loss of appetite or overeating, have problems concentrating, remembering details or making decisions, and may contemplate, attempt or commit suicide. Insomnia, excessive sleeping, fatigue, aches, pains, digestive problems or reduced energy may also be present.[3]

Depressed mood is a feature of some psychiatric syndromes such as major depressive disorder, but it may also be a normal reaction to life events such as bereavement, a symptom of some bodily ailments or a side effect of some drugs and medical treatments.

Mood Swings
A number of psychiatric syndromes feature depressed mood as a main symptom. The mood disorders are a group of disorders considered to be primary disturbances of mood. These include major depressive disorder (MDD; commonly called major depression or clinical depression) where a person has at least two weeks of depressed mood or a loss of interest or pleasure in nearly all activities; and dysthymia, a state of chronic depressed mood, the symptoms of which do not meet the severity of a major depressive episode. A mood swing is an extreme or rapid change in mood. Such mood swings can play a positive part in promoting problem solving and in producing flexible forward planning. However, when mood swings are so strong that they are disruptive, they may be the main part of a bipolar disorder.

Early behavioral, cognitive, or speech interventions can help children with autism gain self-care, social, and communication skills. Although there is no known cure, there have been reported cases of children who recovered. Not many children with autism live independently after reaching adulthood, though some become successful. An autistic culture has developed, with some individuals seeking a cure and others believing autism should be accepted as a difference and not treated as a disorder.

Activities of daily living (ADLs) is a term used in healthcare to refer to daily self care activities within an individual's place of residence, in outdoor environments, or both. Health professionals routinely refer to the ability or inability to perform ADLs as a measurement of the functional status of a person, particularly in regard to people with disabilities and the elderly.[1] Younger children often require help from adults to perform ADLs, as they have not yet developed the skills necessary to perform them independently.

ADLs are defined as "the things we normally do...such as feeding ourselves, bathing, dressing, grooming, work, homemaking, and leisure."[2] A number of national surveys collect data on the ADL status of the U.S. population.[3] While basic categories of ADLs have been suggested, what specifically constitutes a particular ADL in a particular environment for a particular person may vary. Adaptive equipment or device may be used to enhance and increase independence in performing ADLs.

Vicodin is a short acting (3-4 hours) pain medication that contains a combination of acetaminophen and hydrocodone. Both medications are utilized to control pain. Hydrocodone is an opioid (narcotic). n reliever that increases the effects of hydrocodone. Vicodin should be given 15-30 minutes prior to physical therapy or other therapies to ensure proper pain management. The patient is much more likely to engage in any process if their pain is well controlled.

Occupational Therapy

Related to TBI- What other disciplines might be involved in assessment? OT cognition, vision

As inpatient- What other disciplines might be appropriate for referral?

OT to see if modifications in ADLs are needed.

Any equipment needed for ADLs? Maybe tub transfer bench if unable to put weight on one leg to get in tub.

Physical Therapy

Priority #1 check functional status (transfers, walking, assistive device).

Priority #2: Decreased memory may impact learning new skills

Priority #3: Negative behavior may limit safety with mobility. Also, may have increased pain and all of these may feed depression. Indication for referral to mental health practitioner.

Long range goals are back to school and lacrosse.
A PT would perform an assessment of Jeremy's strength, range of motion, pain, and function (can he move in bed, roll, sit up, etc) while taking note of any difficulty answering questions from a possible traumatic brain injury. He will likely be non-weight bearing on the R leg. That means that he can't put any weight on it and will need to learn how to walk safely that way. Usually, this begins with a walker, then progresses to crutches. He will have to learn how to get in/out of bed, transfer sit to stand, walk on level surfaces and on stairs. If he can't do this, then a wheelchair would be arranged and further gait training will occur at homecare or outpatient. His Day 3 symptoms would be concerning and discussion with team members to differentiate mental health vs TBI would be warranted. Goals would be to get him as safe and independent as possible and do lots of family training if needed.

Social Work

Family:
What is the impact of Jeremy's physical and emotional condition on Jeremy's family and social network (the others who live on the reservation).

What are the family's support system? Strengths?

Where are Jeremy's parents?

How are Jeremy's grandparents affected by his accident? What are the ages and physical/emotional health of the grandparents?

Cultural competency:
How could Native American ("First Nation") culture influence case assessment (e.g.refusal to take meds ?).

Could Jeremy's living on a reservation and attending a school off the reservation cause him conflict?

Past treatment
Obtain more information re: Jeremy's treatment for "mood swings" in the past?

Speech Language Pathology

Hitting one's head, particularly if hard enough to lose consciousness, is a red flag for language, cognitive, and behavioral repercussions. Traumatic brain injury may be mild or severe and so results may be obvious or very subtle. If damage is on left side you will be more likely to see either expressive or receptive language difficulties, depending on location and extensiveness of damage. You may see problems with discourse organization (relaying a story, relaying sequential information, explaining how to do something) regardless of site of lesion. Brain injury often leads to word-finding problems. Another possible outcome is impaired executive function. This influences an individual's decision-making, organization, self-regulatory and self-monitoring activities. For example an individual may have problems with time-management or impulse-control. Traumatic brain injury may cause memory problems, either with long term memory or with working memory which is involved in processing and remembering new information. Due to all these possibilities, extensive testing of language (including pragmatics), literacy, and memory should be conducted. Because TBI often has long term implications, therapy must address not only immediate needs but anticipated needs that will come as the demands increase over the years.

TBI may be accounting for his loss of memory, his swearing and belligerence, and his withdrawal. Evaluation and therapy would be appropriate for addressing these issues. It would also be important for him to understand why he is experiencing some of these difficulties and that there should be improvement with time and therapy. He needs to know that his current situation is not permanent and that he should be looking to the future.