Abstract:
This patient is 22-year-old male with the primary diagnosis of a T6 complete paraplegia post gunshot wounds to the chest, abdomen, and left arm. Patient has been transferred to this rehabilitation hospital for inpatient rehabilitation to improve: upper and lower extremity strength, balance, transfer skill, ambulation ability, self-care, management of comorbidity, medication management, bladder and bowel management, and wound care. This patient is classified grade A on the ASIA impairment scale.

Key words:
Complete paraplegia, Asia A

Complete paraplegia: According to the Spinal Cord Injury network that diagnosis of complete paraplegia means a permanent loss of sensory and motor function to the muscles and bodily functions that occur at or below the T1 level of the spinal column.

ASIA A: According to the Shepard Center, the ASIA impairment scale grade A means “A complete lack of motor and sensory function below the level of injury (including the anal area)”. 

Purpose Statement:
The purpose of this case study is to investigate the course of treatment for this 22-year-old male with a newly acquired spinal cord injury and determine the role of adapted activities via recreational therapy interventions in his progress towards his goals.

**Admission History:**

**Admitting Diagnosis:** T6 complete paraplegia

**History of Present Illness:** This patient is a 22-year-old African American male who was admitted to Helen Hayes Hospital for rehabilitation on 5/29/15 after being transferred from Jacobi Medical Center where he was taken after he sustained 4 gunshot wounds to the abdomen, left chest and left arm. One of the bullets resulted in a comminuted fracture of T5 and T6 with bullet fragments across the spinal canal; no attempt was made to remove the fragments. The patient also sustained a left hemothorax requiring thoracotomy and exploratory laparotomy. While at primary medical care facility, patient had an IVC filter inserted, developed acute renal failure, as well as underwent a closed reduction of the left humerus and nailing of left ulna, and left lower lobectomy with a TRAM flap by thoracic and plastic surgery.
History & Physical:

Allergies: No known drug allergies

Medications: Tylenol prn, Lovenox 40mg daily, Gabapentin 300mg tid, Senna 2 tabs daily

Past Medical: No past medical history

Social History: This patient lives in an apartment in Yonkers, NY with a friend. Patient currently holds a management position at McDonalds. Patient’s father lives close by. No history of smoking or drinking.

Functional History: Prior to the accident, patient was fully ambulatory

Review of systems:

This patient is awake, alert, and oriented x3. The patient is in good spirits. Patient denies any changes in his health outside of paralysis from the mid chest down. His incisions are all healed. He developed two pressure ulcers, one on his sacrum and one on his foot. The one on his sacrum is a stage 2-3.
General: No constitutional symptoms

Head, Ears, Eyes, Nose, and Throat: No vision changes or eye pain. No ear pain, tinnitus, no hearing loss. No sinus pain. No dental pain.

Pulmonary: No cough, wheeze, or shortness of breath

Cardiovascular: No chest pain, palpations, dyspnea on exertion or orthopnea

Gastrointestinal: No nausea/vomiting/diarrhea. No GERD, no melena

Genitourinary: No LUTS, no hematuria, no dysuria

**Physical Examination:**

Vitals: pulse: 119 blood pressure: 135/67 temperature 98.9

Head, Ears, Eyes, Nose, Throat: Nasal cannula supple

Cardiovascular: S1S2 regular rhythm and rate

Abdomen: Soft bowel sounds

Extremities: Cyanosis, clubbing, edema were negative

Neurological: Awake, alerts, and oriented x3
Paraplegia

Motor: Upper Extremities: right 5/5, left 2/5. Lower Extremities: Bilateral flaccid paralysis

Sensory: None chest down to lower extremities b/l. Intact above chest

Impression and Plan:

This patient is a 22-year-old male with T6 complete paraplegia spinal cord injury from gunshot wounds. The patient will receive physical therapy to address upper and lower extremity strengthening, improve balance, acquire transfer skills, and improve ambulation ability. The patient will also be receiving occupational therapy services to address self-care skills. Other areas that will need to be addressed during the patient rehabilitation at Helen Hayes are management of comorbidity, medication management, bowel and bladder management, and wound care.

Recreational Therapy Evaluation:

Date of Evaluation: 6/5/15

Patient seen 1400 for 30 minutes.

Present for evaluation: Eileen Andreassi, MA, CTRS

Work/School History: Patient graduated high school. Patient has held multiple miscellaneous job within retail. Before the accident, patient was a manager at a McDonalds.

Musical Preferences: Patients enjoys listening to rap, R&B, and hip-hop.

Community Resources: Mall, pools, movie theatres, parks, and restaurants.

Barriers to Recreational Activities: Accessibility, mobility, and endurance.

Precautions/Safety: Fall, weight bearing.

Pain Status: 0

Frequency of TR visits: 5 times a week

Amount of Time per Visit: 30 minutes daily

**Goals and Treatment Plan:**

Goal 1 for RT: Increase Endurance

Goal 2 for RT: Activity adaptation

Goal 3 for RT: Time management
Paraplegia

Definition

The patient is a 22-year-old African American male, who was admitted into the hospital, after he sustained 4 gunshot wounds to the abdomen, left chest and left arm. The young man’s injuries left him with complete paraplegia, and classifying his as a grade A on the ASIA impairment scale. Paraplegia is paralysis, the loss of the ability to move, of the legs and lower body, typically caused by spinal injury. A spinal cord injury is defined by an injury to the spinal cord that lasts longer than 72 hours; in this case the injury occurs at the T6 vertebra. The client would have good upper body strength with varying stability the lower the level, the stronger the upper body strength and balance. This does not mean he will not have to work on these things, just that it could be better than higher-level injuries (DynaMed, 2015b). A spinal cord injury usually fractures or dislocates vertebrae; the damage begins at the moment of injury and bruises or tears into spinal cord tissue. Most injuries to the spinal cord don't completely sever it. Usually the spine fractures and leads to compressions of the vertebrae, which damages the spinal cord (NINDS, 2015). The young man also has a diagnosis of grade A on the ASIA, (American Spinal Injury Association) Impairment Scale that classifies traumatic spinal cord injuries into 5 categories A-E. Grade A means that he has no motor or sensory function preserved in lowest sacral segments (DynaMed, 2015b).

Demographic information

According to the Reeve Foundation (2016), one in 50 people are living with a form of paralysis, for a total of 6 million people worldwide. This number has grown over the past few years by 33 percent and is expected to continue to grow in the coming years.
Most people who have paraplegia are average age of 32, with the most incidents happening between ages 15 and 25 (DynaMed, 2015b). There are more males with paraplegia, with a ratio of four males for everyone female (DynaMed, 2015a). 35 percent of those who reported having paraplegia due to a spinal cord injury said they had "a lot of difficulty" in moving; whereas 13 percent were "completely unable" to move (Reeve Foundation, 2016). The highest cause for paraplegia is motor accidents with 41.3 percent; my patient is part of the 15 percent that falls under violence caused paraplegia, which was caused by a violent act such as the shooting.

Strengths of the client

While reading through the case study, I noticed the patient has some strengths that will him out during his recovery, such as: the support of family/friends and decent job to get back to. The patient lives in an apartment in New York, with his friend, he could possibly have the help and support needed at home. When his friend cannot be there to help him out the patient has a father that lives close by that can be there within minutes to help when needed. The patient holds a management position at a local McDonald’s; this position will give him something to work for to get back to his job and focus on rebuilding his life. The fact that he has an excellent support system and a job waiting for him will help out with his recovery quite a bit. The chart also claims that one of his favorite activities is swimming; water therapy is a great help to patients with physical disabilities; it gives them a way to move easier.

Needs of client

- Mobility. Paraplegia can cause the permanent loss of muscle function distal to the injury making it harder for him to get along. The client will
have to use a wheelchair from here on out he will need to learn to get around the city in the chair (Mosby, 2012).

• Endurance needs to be improved post-accident. This is very common (U.S. National Library of Medicine, 2014).

• Improve upper and lower extremity strength. Paraplegia can cause the permanent loss of muscle function distal to the injury making it important to build upon the strength he has left (Mosby, 2012).

• Transfer skill. This is also common; patients have to learn to get from wheelchair to bed, bathroom, and other chairs with as much ease as possible (Mosby, 2012).

• Balance. This is very common, and goes along with the transfer skill. The patient needs to adjust to balancing on their arms or assisted devices since they can no longer use their legs, he will also need to build up his core muscles in order to help with balance. (Mosby, 2012).

Environmental barriers

• Living in New York. Most people in New York walk and don’t drive; when you lose your ability to walk, living here can be harder. Wheelchairs will be hard to get down New York sidewalks, but there are other ways. There are services that can pick people up or an individual can get a car with hand controls. This is a common problem people must think about after a paraplegia diagnosis (Reeve Foundation, 2016).

• Living in an apartment. A lot of old New York apartments do not have the proper accommodations, but he has the right to the proper
accommodations and people will help make sure of it, if not he will be able to use these people to find a new place to live (Reeve Foundation, 2016).

- Working in a McDonald’s. There’s not a lot of room behind the counter (for a wheelchair) but that doesn’t mean he has to give up his job. He has the right to work there and it cannot be taken from him because of his paraplegia. There are organizations that will fight to keep these rights intact, but this is often expensive, leading to low employment rate among clients with this injury (Reeve Foundation, 2016).

- Accessibility. This is probably one of the most common things that patients need to face; they can’t do the same things, or go to the same places, and have to find new ways to do things (DynaMed, 2015a).

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Culture information

- 22 years old

The fact that my patient is only 22 is very important. These are the years of transition from high school to college or job force. Things are constantly changing for this age group compared to others. There are two separate groups, one will help of the patient was in or is going to higher education, the other is a vocational rehab to help you get readjusted in the job you had before. It would be critical to talk to the patient at this age, figure out what path they are on and set them up with the right contacts (DynaMed, 2015a).
• African American

The majority of violence-related paraplegia happens to persons of African American descent (DynaMed, 2015a).

• New Yorker

One of the main causes of paraplegia is violence. The fact that my patient happens to be of African American descent and living in New York put him at high risk. New York is known for its crime rate (DynaMed, 2015a).

• Male

There are more males with paraplegia, with a ratio of four males for every one female (DynaMed, 2015a).

• Manager in fast food

Efficacy Research


1 Summary:

A study of the effect of yoga on clients with a spinal cord injury (SCI) had never been done before; this study was the first stepping-stone to see if it would have an effect on these clients. The purpose of this study was to evaluate an eight-week, modified yoga program for individuals with SCI. The study took into account the client’s experiences and program satisfaction. The hypothesis at the beginning of the study is that participants who took part in an eight-week yoga program would have improvements in the following areas post intervention: pain, fatigue, psychological factors and mindfulness. Yoga
programs may be easily modified for varying degrees of impairment and mobility, making it a highly accessible intervention for individuals with SCI. There is yoga clients can do in chairs, and it is just for the upper body, making it perfects for individuals with a SCI.

2 Subjects and Methods:

The program was one 45- to 60-minute class per week for eight weeks, and was taught by a certified yoga teacher who had at least 500 hours of training, a recreational therapist accompanied the yoga instructor in teaching the classes. The sessions would start with meditations that focused on deep breathings and accepting of physical and mental states of each client at that given moment. The class was mainly in a seated yoga style focusing on upper body movement and action. Clients were told to first think about the part of the body they were going to move, then to think how the movement would happen and what it would feel like to move it, and finally to move that part of the body if possible. If a client did not have control over a body part, they were encouraged to return to deep breathing and thinking about moving the body part. Staff member were present for clients who needed assistance. Clients were encouraged to push their comfort and actively engage their muscles in order to build strength and flexibility. The study was open to both in- and outpatients. Criteria for participation in the yoga program were clients must be able to understand instructions in English, participants must be at least 18 years old, they must be able to do 45 minutes of physical activity at a time, and choose to do so willingly. The study was composed of 10 women and one man, five of them were in-patients and six were out patients. To evaluate the success of the program survey
questionnaires were handed out at the end of each class, which measured satisfaction and pain.

3 Findings and Implications:

Out of the 11 clients who took part in the program, only five completely filled out the assessment, by completing at least three classes. The results for the study were based on the four remaining females and one male, all of whom were out patients. The test confirmed that participants who were outpatients were 50 percent more likely to be a part of the program than those who were in-patients. The group relayed high levels of satisfaction with the program (5 out of 5) and that yoga was a positive therapeutic tool (3 out of 5), especially when the classes had more participants and were in depth. Participants said they definitely would recommend yoga for individuals with disabilities or would take part in a yoga program again (5 out of 5). Participants also felt that there were ways the program could be improved. The member believed that classes were too short, and that they wanted to incorporate more poses, and wanted more stretching, and a slower pace. Unfortunately, changes in health among the clients were not found on the surveys from baseline to exit, although clients did report enjoying the yoga intervention, and the data indicated a number of therapeutic benefits, the study could not support the hypotheses posed at the start of the study.

4 Applications for this Case:
This article could be very helpful for my client. He is an inpatient, which the research suggested that he would be less likely to take part in this opportunity, but since he is an inpatient; it would be easier to get him to the program. Since the patient’s condition is something new to him, the way these classes started off could be beneficial to him, thinking about his abilities at this moment and how they could change as he progresses not only with the yoga program, but also in everyday life. Although no health changes were noted in the study it could still be helpful to him. The client needs to work on his strength, endurance, balance that could greatly improve by being part of a yoga program such as this, by building up his core muscles and pushing him to use the muscle he still can. Being around others in the same situation he is in especially in the early stages of his disability could help him socially, to see that it not the end of the world, that things could get better, and give him a good support system to lean on. A program such as this one could greatly improve the client during his difficult time, both physically and mentally.

Top Three Strengths/Needs

Strengths:

- Support of family/friends
- A job waiting on him
- His age, he is young which can play a role in recovery

Needs:

- Balance
- Mobility
- Independence
Goals

- To increase balance through yoga program.
- To increase mobility through learning about and navigating in natural surroundings.
- To increase independence through social interactions.

Facility

My client is at an inpatient physical rehab program at a hospital in New York. Since he is in an inpatient facility, he will have great access to equipment that could help in his rehab journey. The client should also have opportunities to partake in intervention programs, like the yoga one suggested for treatment.

Intervention


The intervention the patient will participate in is a modified yoga program. The program is modified specifically for patients with a SCI, so that they can participate in their wheelchairs or a normal chair. Since this is specifically for people with SCI, the client will be with others who are in the same boat as him; thus could help him cope with this new injury. The program will last two months, and will meet once a week for at most an hour. The program could really benefit the patient, because it focuses on not only moving parts of his body that he still has complete control over, but also parts that he might have lost some function in.
using, will help build up core muscles that will help with balance and using a wheelchair, and makes him think of the process of using muscles that he has lost complete control over. The program will push him to get the muscle tone he still has and continue to build it up in hopes to prevent further loss. There will be CTRS and trained yoga professional present at each session so he will also have a chance to work on independence, learning when to ask for help, when he can do things on his own, and when to deny help all together.

Objectives

1. *Skill practice acquisition:* During the modified yoga program, e.m.p Pt. will assume yoga poses throughout 1-hour session ad. lib. c < 3 breaks to improve balance.

2. Functional use of skill: During modified yoga program, the Pt. will demonstrate at least 4 poses to the class without any assistance and c <2 errors to improve balance.

Progress Note

S (Subjective Data) – patient stated, “what is the point of thinking about moving parts that I know I will never be able to move again.” He also said he was worried about what his friends would think when they found out he was in a yoga program, saying, “yoga is for girls not for guys.” He also stated that he was not sure if he was ready to be around others like him.

O (Objective Data) – the patient was withdrawn from others with in the class when talking about their shared condition, but held a short conversation with some of the male participants in the group. He was slow to get going with the
stretches/poses, but seemed more comfortable with the stretches/poses that affect the parts of the body he still had complete control over. The client was able to go the whole hour with < 3 breaks, but when demonstrating the poses to the class could only do the two that focused on parts of the body he still had complete control over.

A (Analysis) – The patient might get a greater benefit from the program, if the girls and guys were in separate programs. It would be a good idea if the patient 1:1 with a CTRS to help him understand why thinking about moving a body part that cannot be moved is helpful. It might be helpful to have someone move that part of the body for him while he thinks about if for a few sessions.

P (Plan) - The patient is going to continue be a part of the modified yoga program. He seems to be getting a good result from the program with building up the muscles he can still use; hopefully ones he understands the process at place for muscles he can no longer use we will see improvement here as well. Once the program is concludes, I will refer the patient to out patient physical therapy, and yoga program with his permission to continue his rehab, with his written permission.

Discharge Plan

The Pt. is a 22 yo SBM, who was admitted into an inpatient rehab program. The main Dx of T6 complete paraplegia post gunshot wounds to the chest, abdomen, and left arm. Cl. will be discharged on 4/27/16. His current intervention is a two month modified yoga program directed specifically for
SCI patients. The Pt. took part in this program, in hopes to improve his balance. Skills measured were muscle endurance and independence. The Pt. was able to withstand the program, but fell short of his goal of demonstrating to the class the parts of the body he could no longer use. When he discharged, the Pt. will need to continue his physical activity through either another modified yoga program or another exercise of his choice. After getting written permission from the Pt. he will be referred to a local support group, for those with SCI; would really benefit him, helping him come to terms with his new condition and help him realize the importance of the exercises he has been doing for the past two months.

Courtney McLaughlin, RT Student

April 27, 2014
References


http://www.christopherreeve.org/site/c.mtKZKgMWKwG/b.5184189/k.5587/Paralysis_Facts_Figures.htm