Case Study

Natalie Chau

Old Dominion University, School of Nursing

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Mr Becerra

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Introduction

On November 12, 2024, at Bon Secours Maryview Medical Center on 2 South Medical Surgical Unit. I cared for a patient who will be referred to as "Patient J.F.," a relatively young 46-year-old Caucasian male. This case study will examine Patient J.F.'s medical history, how past medical diagnoses impact his current diagnosis and access, and find interventions for the patient, physically and mentally, during his stay at Maryview. Ultimately, this study aims to develop a comprehensive plan and identify nursing diagnoses and interventions to care for Patient J.F., ensuring we include holistic and medical interventions. All interventions will be backed up with nursing research, nursing theory, and the collaboration of the healthcare team. Patient J.F. was admitted into Maryview Medical Center on 2 South Medical Surgical Unit on November 11, 2024, from non-traumatic Rhabdomyolysis. Patient J.F. is a complete code, and his past medical history included sexually transmitted disease (chlamydia), herpes simplex virus, and an imbalance inguinal hernia. The patient is allergic to sulfamethoxazole-trimethoprim.

Rhabdomyolysis is a condition where skeletal muscle tissue breaks down, releasing harmful proteins and electrolytes into the bloodstream, which, if untreated, can get complicated with acute kidney injury and electrolyte imbalances (Chang et al., 2022). The opportunity to study this multifaceted approach to managing a condition like this was provided by Patient J.F. The patient is 182.9 cm and weighs 179.9 pounds, identifying as Hispanic/Latino and primarily speaking English. His past medical history includes sexually transmitted diseases (chlamydia), herpes simplex virus, and an imbalance inguinal hernia. Additionally, J.F. is allergic to sulfamethoxazole-trimethoprim, so the parameters of his medical management were accordingly prescribed.

This case study aims to develop a complete care plan for Patient J.F. based on medical and holistic interventions. It employs evidence-based nursing research, theory, and teamwork with the healthcare team to ensure his physical and emotional well-being while in and out of the care facility. The case study seeks to:

- Review medical history and its role in current diagnosis.
- Provide nursing practice-based diagnosis and interventions.
- Discuss a holistic approach to care provision.
- Provide evidence-based and theory-backed interventions.

A 46-year-old Caucasian male presented to Bon Secours Maryview Medical Center on 11/11/2024 with a diagnosis of non-traumatic Rhabdomyolysis, J.F.s. The patient is 182.9 cm tall, weighs 179.9 pounds, is Hispanic Latino, and speaks English as his primary language. He has a known medical history of sexually transmitted diseases such as chlamydia, herpes simplex virus, and imbalanced inguinal hernia. One of the products in his prescription, Sulfamethoxazole-trimethoprim, is hypersensitive to J.F. Developing a tailored intervention and delivering patient-centric healthcare services require information about J.F.'s medical history.

The medical history of the patient includes sexually transmitted infections, such as chlamydia and herpes simplex virus, in which the herpes simplex virus is chronic and requires permanent care and management (Sibley & Larkin, 2020). More notably, he has also been diagnosed with an imbalanced inguinal hernia, which may affect his general physical health as well as his recovery process or process. The diagnoses mentioned, however, cannot directly connect to the present diagnosis. Yet, they serve as the solid basis for comprehending the patient's general health status and the vulnerabilities to which he is susceptible. Furthermore, the patient is hypersensitive to sulfamethoxazole-trimethoprim, hence one among the many

compounds found in antibiotics (Kemnic & Coleman, 2022) that the patient should be treated with, and therefore, the choices of his prescriptions are essential to make. Knowledge of a patient's medical history is critical in designing patient-centered and customized interventions and management plans, according to Kwame and Petrucka (2021).

Escalante et al. (2023) reported that people with different cultural backgrounds may have different perceptions of their condition and the services provided. However, Escalante et al. (2023) reported that other cultures may have different interpretations of health and illness based on cultural beliefs that will influence people's perception and response to the healthcare intervention. Understanding J.F's sociocultural context is vital for providing culturally based interventions that enable J.F to incorporate his health beliefs into the interventions and treatments provided for him. In addition, culture-sensitive communication approaches should be incorporated to make the patient feel respect and understanding of loved ones. If, as Lauwers et al. (2024) suggest, the healthcare team acknowledges and appreciates the patient's culture, it can develop customized interventions, improve its engagement in the care process, and conduct a holistic care approach to the patients that meets their preferences and values.

The Patient, J.F., is a 46-year-old male, 182.9 cm (6 feet) tall, 179.9 pounds (81.6 kg), with a BMI of 24.4 (CDC, 2024). The initial health status was evaluated by assessing a patient's baseline vital signs before admission to Bon Secours Maryview Medical Center. These included temperature, heart rate, respiratory rate, blood pressure, and oxygen saturation levels. They don't give specific values, but any abnormalities here would lead to immediate medical interventions and serve as a baseline for looking at his response to treatment while in the hospital.

Admitting Diagnosis, Pathophysiology, and Presenting Symptoms

Skeletal muscle tissue breakdown (Rhabdomyolysis) releases toxic proteins and electrolytes into the stream and, if left untreated, leads to complications of acute kidney disease and electrolyte imbalances (Chang et al., 2022). The condition was considered non-trauma in Patient J.F., who had features consistent with progressive immobility or an underlying health factor. Understanding the pathophysiology, clinical presentation, and diagnostic criteria of the condition is necessary to develop targeted nursing interventions and manage symptoms during Rhabdomyolysis.

Rhabdomyolysis is a medical condition caused by the necrosis and breakdown of the muscle tissue and the subsequent release of its intracellular contents into the blood. Different factors cause it; however, the primary pathophysiology of the disease is the breakdown of the sarcolemma membrane and the introduction of the intercellular content into the blood circulation (Cabral et al., 2020). Ammendolia et al. (2021) report that this membrane could be damaged due to metabolic, physical, or chemical processes. Introducing myoglobin to the blood circulation could overburden the kidney and lead to acute kidney damage. Rhabdomyolysis, nontraumatic, is caused by using particular substances or drugs or prolonged immobility, as is the case of Patient J.F., which should be established and addressed for effective interventions, care management, and prevent recurrence.

Patient J.F. had typical Rhabdomyolysis symptoms at admission (generalized localized muscle pain, muscle weakness, fatigue). Dark-tinted urine, the hallmark of myoglobinuria, indicated a lot of breakdowns in the patient's muscles (Anwar & Gupta, 2020). The high creatine kinase levels in the laboratory results were the basis. Imbalances of electrolytes, such as hyperkalemia, are common and can threaten patients' lives by exposing patients to terminal

conditions such as arrhythmias or acute kidney damage from myoglobin intoxication in the renal tubules (Cabral et al., 2020). Keen monitoring and efficient management of these conditions were the key to preventing more damage and setting up recovery measures in patent J.F. in facility care.

In Patient J.F., a diagnosis of Rhabdomyolysis was confirmed with diagnostic and key laboratory findings. The first marker of muscle injury was elevated creatine kinase (CK), more than five times the standard upper limit. Dark urine was also seen, and myoglobin in the urine helped support the diagnosis. In addition, additional panels would have been postulated for hyperkalemia, hyperphosphatemia, hypocalcemia, or renal function tests to assess the risk for acute kidney injury in the laboratory. Other causes of muscle damage or other complications were ruled out by imaging studies such as ultrasounds or MRIs.

Nursing Diagnoses

In Patient J.F., a holistic nursing approach was necessary to help prevent fluid and electrolyte imbalance, acute pain of muscle breakdown, and impaired physical mobility. The interventions included maintaining hydration with IV fluids, keeping an eye on electrolytes, and finally starting pain management. Also, nursing care-oriented positioning is necessary to avoid complications, especially pressure ulcers and slow journey to mobility. If recovery is to be improved, holistic interventions, such as mental health support and culturally sensitive communication, were added. They were evidence-informed and worked with the healthcare team.

Patient J.F. is at risk of fluid and electrolyte imbalance, acute pain associated with muscle breakdowns, and at risk of impaired skin integrity associated with immobility. When recovering,

he received comprehensive care with diagnoses all focused on interventions to fulfill his fluid and pain care as well as skin complications.

According to Cabral et al. (2020), patient J.F. is at high risk of fluid and electrolyte imbalances, including hyperkalemia, hypocalcemia, and acute kidney injury, due to intracellular component release into the bloodstream (such as potassium and myoglobin). To minimize these risks, electrolyte monitoring, fluid intake, output monitoring, and regular electrolyte panels are required.

Pain is caused by the large amounts of muscle damage caused by Rhabdomyolysis, and effective pain management strategies are required, including prescribed analgesics as well as non-pharmacologic techniques such as repositioning and heat therapy (Burgess, 2021).

Patient J.F. is at risk for pressure injuries as he is not able to be as mobile as he would be in his home. According to Everett Day et al. (2022), prevention is regular repositioning, pressure relieving devices, and meticulous skin assessment to show skin integrity and healing.

Theoretical Support for Diagnoses

Each intervention is based on evidence-based research and nursing theory. IV fluids and electrolyte monitoring are the main things to do to prevent kidney failure and maintain homeostasis with Rhabdomyolysis. The pain management theory of McCaffery and Pasero focuses on pain management within an individual need framework and aligns with pain management (Monroe, 2021). Research from the Agency for Healthcare Research and Quality (AHRQ) on preventing hospital-acquired pressure injuries forms the basis of positioning and skin care interventions (Gupta et al., 2020). The theory of cultural competence and

person-centered care guides the holistic approaches to care (cultural sensitivity and mental health support) (Contini, 2022). The collaborative practice model is followed by collaborating with the

Patient Outcomes

Patient J.F.'s rhabdomyolysis management must be effective at both short- and long-term health outcomes. Some short-term aims are to stabilize vital signs, relieve acute symptoms, and reduce the chance of complications such as kidney injury or imbalances of electrolytes. Long-term goals include full recovery, less or no recurrence, and patient education regarding lifestyle changes. An intervention is evaluated by monitoring laboratory values, symptom resolution, and patient feedback. This section uses a collaborative care approach and evidence-based practices to support J.F.'s recovery and maintain health outcomes.

The first care plan for Patient J.F. is the short-term goal of stabilizing his condition. Management of acute pain and weakness as these symptoms appear and physiological stability. However, immediate risks must be controlled, pain relieved, and a successful recovery promoted, and all of this can only be accomplished through prompt interventions.

Patient J.F.'s vital signs have to be within normal range. That includes maintaining constant blood pressure, heart rate, respiratory rate, and oxygen saturation. These indicators are the body's ability to deal with Rhabdomyolysis's effects and respond to treatment interventions such as fluid resuscitation and electrolyte correction.

The immediate goal is to reduce muscle pain and weakness from muscle breakdown. Restoration of comfort and mobility are the focus of effective pain management strategies, along with supportive care. Preventing further complications and early recovery is going to require addressing these symptoms.

Patient J.F.'s long-term goal is to recover completely and prevent further Rhabdomyolysis. The main objectives include restoring full physical mobility, optimizing renal function, and maintaining electrolyte balance. There is patient education, particularly the need to hydrate, identify early warning signs, and follow medical advice. Such as overall techniques, such as showcasing way of life changes and addressing emotional wellness, to help support the maintenance of health improvements. Ongoing assessment and intervention as needed through regular follow-ups by the healthcare team. These long-term goals are both physically and emotionally recover-focused, giving J.F. the ability to live an independent, well-informed life post-discharge.

Preventing future episodes of Rhabdomyolysis is a critical long-term goal driven by risk factors that might include dehydration, prolonged immobility, or medication side effects. It includes developing a tailor-made prevention plan for J.F. based on his lifestyle and medical history.

It's important to educate J.F. about what to look for that indicates an early warning sign, how to stay properly hydrated, and how to avoid substances or activities that could trigger reoccurrence. Medication management is clear regarding who he is allergic to and has been diagnosed before this, giving him an active role in his health.

Regular follow-ups, normalized laboratory tests of creatine kinase and kidney function, and patient-reported outcomes, including sustained symptom resolution and adherence to preventative measures, will evaluate the progress. This evaluation ensures that the health is stable in J.F.'s case and the risk factor is well managed.

Interventions

To manage the patient's condition to the best capacity, we require a multifaceted approach based on medical, nursing, and holistic approaches. The treatment stabilizes the patient's condition through IV fluids and monitoring electrolytes and medications. The nursing intervention can address physical needs such as pain management, positioning, and skin care, as well as holistic interventions such as cultural sensitivity, mental health support, and family involvement. As an individual, J.F. teaches his healthcare team to collaborate with him to be sure that all pieces of the J.F. case work together for optimal outcome results. Each intervention is based on evidence-based practices and nursing theory, ensuring patients receive adequate patient-centered care.

Medical Interventions

- **IV Fluids**: To prevent dehydration, help the kidneys function, and dilute myoglobin in the blood, the patient needs to receive intravenous fluids (Urden et al., 2023). Fluid resuscitation helps keep kidneys from developing acute kidney injury and corrects electrolyte levels.
- **Electrolyte Monitoring**: Detecting electrolyte imbalances that can cause life-threatening complications such as arrhythmias or cardiac arrest requires regular monitoring of electrolytes (such as potassium, calcium, and phosphate) (Rafaqat et al., 2022).
- **Medications**: Stabilization of the patient's condition requires that medications such as pain relievers (NSAIDs or opioids) and medications used to correct electrolyte imbalance (e.g., calcium gluconate for hyperkalemia) are administered (McNaull & Suchar, 2020).

Nursing Interventions

- **Positioning**: Immobilization is frequently repositioned, and pressure-relieving devices are used to minimize the risk of skin breakdown due to immobility. This corrects the alignment, preventing further musculoskeletal stress, making you more comfortable, and decreasing the risk of a secondary injury.
- **Pain Management**: For J.F.'s acute pain from muscle breakdown, a multimodal approach, which includes medications and analgesics) and non-pharmacological methods, such as relaxation techniques and heat therapy, are necessary for acute pain.
- **Skin Care**: Pressure sores and other skin complications are prevented with regular skin assessments, skin hygiene, and keeping skin moist (Lichterfeld-Kottner et al., 2020).

Holistic Interventions

- **Cultural Sensitivity**: Learning about J.F.'s Hispanic/Latino background permits better care practice that is culturally appropriate and lends building trust and better communication. Being mindful of cultural norms and beliefs means the patient will feel respected and valued.
- **Mental Health Support**: Anxiety or depression related to the illness and hospitalization must be addressed, too. Counseling provides, and active listening promotes mental well-being.
- **Collaboration with the Healthcare Team:** Care is delivered through interdisciplinary work with physicians, physical therapists, dietitians, and other healthcare professionals. J.F. is a child with changing needs, and adapting the treatment plan to J.F.'s needs means regular case discussions and updates.

- **Family Involvement**: Participation of J.F.'s family in planning his care improves emotional support and comfort for the patient. It also helps the family know that the patient is sick and the patient's plan for recovery and prevention measures.

Holistic or Cultural Considerations in Patient Care

Holistic care for Patient J.F. means touching his physical health, as well as his mental, emotional, and cultural needs. This approach provides a complete understanding of the unique circumstances of his providing for recovery and patient satisfaction. The care plan helps J.F. focus on his emotional support, cultural competence, and strategies for communicating and adhering to his care.

Stressful hospitalization and acute illnesses can lead to feelings of anxiety, fear, or vulnerability. For J.F., it is essential to understand and deal with the emotional effects of Rhabdomyolysis. Supporting people's emotional well-being by listening actively, helping with counseling services, and consistent communication reduces stress. Guided imagery or mindfulness exercises can even offer additional mental benefits for him. Involvement in care discussions helps patients feel in control and diminishes helplessness, which will help with overall recovery.

J.F. identifies as Hispanic/Latino to demonstrate the importance of culturally competent care using culturally competent methods. Cultural competence means that you understand his values, beliefs, and preferences regarding how he wants to be treated. This includes acknowledging culturally specific approaches to health or illness, dietary choices, or family dynamics. J.F. himself will invariably accommodate a linguistically disadvantaged healthcare

team. Still, there is an obligation to this healthcare personnel to ensure their comprehension of medical terminology and instructions has been verified to ensure there is no miscommunication.

The care team should provide clear, jargon-free explanations of the care plan and why J.F. needs to follow it, supplemented with visual aids or written materials for J.F. in a culturally acceptable format to help J.F. adhere to the treatment plan. Education is made to fit around his learning style, be it verbal, visual, or experiential, so comprehension is enhanced. When J.F. is involved in setting reachable, measurable goals, he feels responsible for recovery. It also helps facilitate adherence and provides emotional support for sick patients by engaging family members (when permitted culturally).

As the care team integrates these holistic considerations, J.F.'s physical, emotional, and cultural dimensions are attended to to help increase physical recovery and long-term health sustainability in every way, mentally and emotionally.

Evaluation

After providing an evaluation for J.F.

Conclusion

Patient J.F.'s case shows the complex nature of patient management of non-traumatic Rhabdomyolysis. It illustrates the need to understand all aspects of pathophysiology, develop one individualized care plan for each patient, and prioritize holistic health. By careful assessment and intervention, the healthcare team addressed J.F.'s immediate physical needs but addressed his mental, emotional, and cultural well-being first. This case serves as a reminder that risk factors, particularly dehydration or immobility, should be identified early and evidence-based practice put into place to reduce complications such as acute kidney injury and electrolyte imbalance.

How J.F.'s condition was managed illustrated the importance of interdisciplinarity to the success of care delivery. They worked as a team, and all of the physicians, nurses, dietitians, and physical therapists were able to work cohesively to make sure all parts of his health were taken care of. The synergy between medical and holistic approaches was made possible by an integrated and collaborative approach, enabling J.F. to receive the appropriate care on a one-to-one basis. The care treated the acute condition and taught J.F. skills to maintain long-term health by supporting open communication and drawing on each team member's expertise.

Patient-centered care was equally important based on evidence-based research and nursing theory. With this method, all as conducted — IV fluid mental health support — were evidence-based and according to J.F.'s preferences and values. By providing J.F. with patient education delivered with cultural sensitivity, he could take an active role in managing his care, and his adherence to the care plan immensely helped decrease the risk of returning.

J.F.'s case points to the need for a whole system of interdisciplinary management of complex medical illnesses. This reinforces the worth of care customization to fit the patient, recognizing that physical recovery is, in practice, a multi-dimensional experience. This was an experience remembering the fantastic effect compassionate, evidence-based care can have on patient outcomes and satisfaction.

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