Demographic Data

Date of Admission: 06/21/2021
Admission Diagnosis: Chest pain
Chief Complaint: Chest pain, abdominal discomfort, back pain
Age: 92 years old
Gender: Female
Race/Ethnicity: White/ Caucasian
Allergies: Erythromycin (hives), Novocain (N/A), penicillin (hives)
Code Status: Full Code
Height in cm: 147 cm
Weight in kg: 44.1 kg
Psychosocial Developmental Stage: Ego Integrity vs. Despair (Videbeck, 2019)
Cognitive Developmental Stage: Formal operational (Videbeck, 2019)
Braden Score: 18
Morse Fall Score: 45
Infection Control Precautions: Standard

Medical History

Medical History (Chronic and Ongoing):
Hypertension, hypercholesterolemia, coronary artery disease, osteoporosis, GERD, hiatal hernia, depression, atrial fibrillation

Surgical History:
Atrial fibrillation ablation (2009), hysterectomy, colonoscopy, endoscopy, cataract surgery, pelvic fracture surgery (2014), small bowel obstruction surgery (2016)

Prior Hospitalizations:
Pelvic fracture due to accident in 2014, small bowel obstruction in 2016.

The patient went to annual cardiologist checkups from 2018-2020.

Social History:
The patient denies alcohol and drug use/ The patient is a former smoker of 1 pack of cigarettes per day for 40 years. The patient starts smoking at the age of 20 and quit smoking at the age of 60.

Admission History

The patient is a 92-year-old female with a history of hypertension, osteoporosis, depression, and GERD. She was admitted to the hospital for observation on June 21, 2021, due to chest pain. The patient states that the pain started two days ago. As the day goes by, the pain worsens with movement. The patient describes the chest pain as “constant aching that radiates into her back and a level of 7/10”. She also started to feel abdominal discomfort. She took Tylenol with codeine to relieve the pain; however, she only experiences minimal relief. She decided to go to the emergency department for further treatment.

Pathophysiology

Disease process:
Capriotti (2020) states that the mechanism of pain is complex. Several theories provide a basis for understanding how pain works. Many diseases and conditions can cause chest pain. Cardiac-related chest pain can happen when there is insufficient blood flow to the myocardium due to blood clot blockage or atherosclerotic plaque. Lack of tissue perfusion can happen when blood flow to the heart is interrupted or obstructed.
Hypertension is assumed to cause microvascular abnormalities, which can cause a decrease in blood flow in the coronary blood vessels that can cause chest pain (Capriotti, 2020). When blood pressure is uncontrolled and high, it can damage the arteries by making them less elastic, which decreases the flow of blood and oxygen to the heart.

S/S of disease:
Chest pain may feel like pressure, choking, squeezing or heaviness on the chest. Cardiac chest pain may feel like crushing sensation on the left side of chest that can radiates to shoulder, arm, jaw, back, neck or epigastric region (Capriotti, 2020).

Method of Diagnosis:
According to Capriotti (2020), to find out the cause of chest pain, the physician may order an electrocardiogram (ECG), blood tests, chest x-ray, and CT scan. ECG will show electrical activity of the heart and if chest pain is due to MI. Blood tests such as cardiac enzyme and serum electrolyte can help determine if the cause of chest pain is from heart problems or electrolyte imbalance. A chest x-ray will visualize the condition of the lung and heart, which can show if chest pain is due to lung or heart problems. CT scan can show blood clots and calcification of coronary arteries, which can cause chest pain (Capriotti, 2020).

Treatment of disease:
Treatment for chest pain can involves oxygen supplementation for SaO_2 less than 95%. Medication that can be used are nitrates or nitroglycerin and aspirin (Capriotti, 2020).

Lab Values/Diagnostics

Serum abnormalities

BNP (< 100 pg/mL): 105

- Elevation of BNP level suggests heart failure and can happen with MI (Pagana et al., 2020). One of the manifestations of MI is chest pain. The patient was admitted for chest pain. However, MI was ruled out due to the troponin level are normal.

Lipase (0 – 160 U/L): 568

- Elevated lipase is associated with acute pancreatitis (Pagana et al., 2020). The patient was also experiencing chest pain with abdominal discomfort and back pain. Abdominal pain and back pain are the clinical manifestation of acute pancreatitis (Capriotti, 2020)

Monocyte (4.4 – 12.0 %): 13.7

- Elevated monocyte is associated with viral infection (Pagan et al., 2020). The patient was admitted for chest pain, and on the chart, there is no noted viral infection going on to the patient, which should be further investigated.

Diagnostic imaging completed. (The imaging are done to find the cause of the patient's chest pain)

Echocardiogram: indication was chest pain

- Result: ejection fraction of 50-55%

Chest x-ray: indication was chest pain.

- Result: heart size is normal, atherosclerotic changes seen, large hiatal hernia and right bibasilar atelectasis

CT Angio chest and aorta with contrast: indication was chest pain.

- Result: atelectasis change in right lower lobe of lung

EKG: indication was chest pain.

- Result: normal sinus rhythm

CT abdomen and pelvis with contrast: indication was abdominal discomfort and back pain.

- Result: severe T12 compression deformity and degenerative changes in spine

Ultrasound of abdomen: indication was increase lipase level.

- Result: Dilated gallbladder without stone or inflammation noted.

Medications

Acetaminophen/Tylenol (Non salicylate, para-aminophenol derivate/ antipyretic and nonopioid analgesic): used for pain and fever.
- This medication may cause hepatotoxicity; review the patient's liver function test (Jones & Bartlett, 2019).

Acetylsalicylic acid/Aspirin (Salicylate/NSAID): used for pain and antiplatelet effects.
- Review the patient's platelet count.

Ascorbic acid/ Vitamin C: used for antioxidant and vitamin C deficiency,
- Vitamin C can cause kidney stone which can worsen renal function; review the patient's serum creatinine (Frandsen & Pennington, 2020)

Atenolol/Tenormin (Beta-adrenergic blocker): used for hypertension.
- Assess the patient vital signs such as blood pressure and heart rate.

Enoxaparin/ Lovenox (low-molecular-weight heparin): used for prevention of DVT, VTE, and PE
- Review the patient's platelet count and activated partial thromboplastin time/ aPTT (Frandsen & Pennington, 2020).

Hydrocodone-acetaminophen/Norco (opioid and non-salicylate analgesic combination): used for moderate to severe pain.
- This medication may cause hepatotoxicity; review the patient's liver function test Assess the patient's respiration due to increased risk of respiratory depression (Jones & Bartlett, 2019).

Lisinopril/ Zestril (Angiotensin-converting enzyme "ACE" inhibitors): used for hypertension.
- Assess the patient's blood pressure (Jones & Bartlett, 2019)

Nitroglycerin (Nitrate): used for chest pain.
- Assess the patient's vital sign such as blood pressure and heart rate (Frandsen & Pennington, 2020).

Ondansetron/Zofran (Selective serotonin receptor antagonist): used for nausea and vomiting.
- Review the patient's serum electrolytes such as potassium and magnesium. When ondansetron is administered when patient has hypokalemia or magnesium, it can increase risk for QT-interval prolongation (Jones & Bartlett, 2019)

Pantoprazole/Protonix (Proton pump inhibitor): used for GERD.
- Review PT and INR with concurrent use of anticoagulant therapy (Jones & Bartlett, 2019)

Pravastatin/Pravachol (HMG-CoA reductase inhibitor): used for hypercholesterolemia.
- Review the patient's liver function test baseline because this medication can cause impaired hepatic function (Frandsen & Pennington, 2020)

0.9% Sodium Chloride/Normal Saline Solution (Crystalloid isotonic fluid): used to prevent dehydration.
- Review the patient's baseline vital signs (BP, HR, RR, pulse oximetry) and lung sounds.

Active Orders

- **Vital sign Q4H**
  - assessing vital signs every four hours will help determine whether the patient's condition worsens or improves.
- **Continuous cardiac monitoring/ telemetry:**
  - Since the patient is experiencing chest pain, it is essential to monitor heart activity to ensure chest pain is not due to cardiac-related problems such as myocardial infarction.
- **Medication- Nitroglycerin for chest pain (0.4 mg, sublingual, PRN Q5 minutes):**
  - if the patient is experiencing chest pain, nitroglycerin is administered to relieve pain.
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Physical Exam/Assessment

General: Alert and responsive; oriented to person, place, time, situation; appears uncomfortable, weak, and agitated due to back pain; appropriately dressed**.**

Integument: Skin color usual for ethnicity; dry, intact, loose skin turgor due to age; no rashes, bruises, wounds, drains noted.

HEENT: Normocephalic, symmetrical facial feature; Palpable thyroid cartilage, no tracheal deviation, no palpable lymph nodes, 3+ carotid pulse bilaterally; Gray tympanic membranes bilaterally, auricle pinna are intact; Pupils are equal, round, reactive to light, and accommodate, white sclera & conjunctiva, intact extraocular movements; Bilateral nasal patency, no discharge, no frontal or maxillary sinus pain; Pink, moist, firm gingiva; Pink, moist buccal mucosa; Rise and fall of soft palate, symmetrical uvula.

Cardiovascular: S1, S2 clear with no murmur; No friction rubs or gallop; Regular heart rhythm; Pulses: 3+ radial bilaterally; Capillary refill <3 seconds; No neck vein distention, absent edema

Respiratory: No accessory muscle used; Regular respiratory rate and pattern; Clear lung sounds in all lobes anteriorly and posteriorly; Lung aeration are equal in all lobes anteriorly and posteriorly

Gastrointestinal: Active bowel sounds in all four quadrants; regular diet at home; regular diet while admitted; height and weight of 147 cm and 44.1 kg; last BM 06/20/2021; No pain tenderness, mass, or pain, and guarding. Soft and non-distended; No noted distention, incision, scars, drain and wound upon inspection; No ostomy, nasogastric tube or feeding tube.

Genitourinary: No hesitancy; no frequency; no urgency; urine is clear, yellow, voided 250 mL

Musculoskeletal: Pink nailbeds, cap refill <3 seconds, warm extremities; activity: stand by assistance; Active ROM in all 4 extremities bilaterally. 4- active motion against most resistance in all four extremities (slight weakness).

Neurological: MAEW; PERRLA; alert and oriented to person, place, time, situation; normal cognition; clear speech; awake & answer questions appropriately

Most recent VS (include date/time and highlight if abnormal):

06/22/21: Elevated systolic BP may be due to patient history of chronic hypertension and experiencing back pain.

Time	Pulse	B/P	Resp Rate	Temp	Oxygen
0805	70 bpm	150/67 mmHg	20 bpm	36. 8 C tympanic	93% room air
1142	67 bpm	150/77 mmHg	18 bmp	37.1 C tympanic	94% room air

Pain and pain scale used: Numerical scale; 9/10; describe as a “constant aching pain” in the back; Hydrocodone-acetaminophen/Norco was administered; pain reevaluation was 5/10 (30 minutes after initial assessment)

Nursing Diagnosis 1	**Nursing Diagnosis 2**	**Nursing Diagnosis 3**
Acute pain related to T12 compression fracture as evidence by a 9/10 pain assessment.	Anxiety related to back pain as evidence by patient expressing concern and frustration about ongoing pain.	Risk for decrease functional ability related to slight weakness of patient evidence by decreased muscle strength.
Rationale Acute pain is high priority. The patient is concern more about her back pain now while being admitted.	**Rationale** The patient was anxious about her back pain. She feels frustrated that the doctor was not even addressing her concern at all.	**Rationale** The patient state that she feels weak due to back pain. She does not want to do activities or move around.
Interventions **Intervention 1:** administration of hydrocodone-acetaminophen **Intervention 2:** assess the patient response to medication.	**Interventions** **Intervention 1:** We allowed the patient to talk about her feelings and voice all of her concern. **Intervention 2:** We explained all procedure and activities that was planned for the patient in simple language	**Interventions** **Intervention 1:** Provide rest period in between activities. **Intervention 2:** Referral for PT and OT was made.
Evaluation of Interventions The patient states that she feels much better now, and the pain decreased to a 5/10. She was glad that the medication help eases some of her pain.	**Evaluation of Interventions** We explained to the patient all the procedures and activities that were planned for her that day. The patient voices her concern and understand what we were trying to do for her. She feels more relaxed talking to us than talking to the doctor.	**Evaluation of Interventions** We explained to the patient that PT or OT would come in to do some evaluation. However, she states that she does not want to see PT or OT. We told her that we would let her rest before PT comes in.

References (3) (APA):

Capriotti, T. (2020). *Davis advantage for pathophysiology: Introductory concepts and clinical perspectives* (2nd ed.). F.A. Davis Company

Frandsen, G., & Pennington, S. (2020). *Abrams' clinical drug therapy: Rationales for nursing practice* (12th, North American ed.). LWW.

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Pagana, K. D., Pagana, T. J., & Pagana, T. N. (2020). *Mosby's diagnostic and laboratory test reference* (15th ed.). Elsevier.

Videbeck, S. (2019). *Psychiatric-mental health nursing* (8th ed.). LWW.