Medications

- acetaminophen (Tylenol) 500 mg tablet orally every 4 hours as needed for pain. Pharmacological class: Non-salicylate, para-aminophenol derivative. Therapeutic class: Antipyretic, nonopioid analgesic. The patient is utilizing this medication for pain relief purposes related to her recovery after her surgical procedure. Before administering this medication calculate the patient's total daily intake of the medication including other products that contain acetaminophen to ensure that the patient's safe maximum daily dosage is not exceeded (Jones & Bartlett, 2022).
- oxycodone (Roxicodone) 5 mg tablet orally every 4 hours as needed for pain. Pharmacological class: Opioid. Therapeutic class: Opioid analgesic. The patient is utilizing this medication for pain relief purposes related to recovery from her surgical procedure. Assess the patient's blood pressure before administering oxycodone because hypotension can occur with the use of this medication after a surgical procedure (Jones & Bartlett, 2022).
- ketorolac (Toradol)15 mg. IV push, every 6 hours as needed for moderate pain. Pharmacologic class: NSAID. Therapeutic class: Analgesic. The patient is utilizing this medication to assist in the management of pain when experiencing severe pain. Before administering the medication ensure that the patient is urinating properly and not experiencing any output related issues (Jones & Bartlett, 2022).

Demographic Data

Admitting diagnosis: Acute appendicitis.

Age of client: 15 years old.

Sex: Female

Weight in kgs: 58 kg.

Allergies: Amoxicillin is the only reported allergy.

Date of admission: 3/21/2024

Psychosocial Developmental Stage: Identity vs role confusion.

Cognitive Development Stage: Formal operational stage.

Admission History

A 15-year-old female patient weighing 58 kg. and height of 167.6 cm. arrived at the ED with complaints of severe abdominal pain in the RLQ rated as a 6/10 on the numeric pain scale. Patient reports that she has experienced a stabbing pain and nausea since Saturday, and the pain has gradually increased since then. Patient reports nothing helps the pain experienced and movement of any kind makes the pain worse. The patient utilized Tylenol to attempt to alleviate the pain she was experiencing. The patient states that "the pain does not radiate" she explains that she only experiences the pain in the RLQ of her abdomen. The patient denies experiencing fever, chills, cough, urinary issues, or shortness of breath. An ultrasound performed of the patient's abdomen provided visual findings associated with acute appendicitis. During the examination of the patient abdominal swelling was noted with McBurney's point present when pressure is applied.

Pathophysiology

Disease process: Appendicitis is the inflammation of the appendix which is located where the small and large intestines meet. Appendicitis can occur because of an obstruction that narrows the lumen of the appendix and results in blood restriction. Also, the growth of bacteria can occur resulting in pressure and distention because of bacterial secretions trapped behind the lumen because of the narrowing that has occurred. The mucosa layer is compromised resulting in bacteria spreading and attacking the wall of the appendix resulting in inflammation. This can lead to peritonitis resulting from the appendix rupturing (Capriotti & Frizzell, 2020).

S/S of disease: Signs and symptoms of appendicitis include severe abdominal pain in the RLQ, rebound tenderness, McBurney's point, abdominal distention, nausea, vomiting, poor appetite, chills, and fever. A positive Psoas sign, Rovsing's sign, or Obturator sign are also utilized in the diagnosis of appendicitis (Capriotti & Frizzell, 2020). The patient's signs and symptoms experienced and documented during admission were severe RLQ pain, tenderness, McBurney's point, and nausea.

Method of Diagnosis: When diagnosing appendicitis, the initial physical exam, CT scan, abdominal Xray, abdominal ultrasound, and an elevated WBC count and C-reactive protein can be utilized in properly diagnosing a patient who is experiencing appendicitis (Capriotti & Frizzell, 2020). The patient was diagnosed by utilizing an abdominal ultrasound and surgery was decided as the best option to resolve the patient's disease process and prevent any further complications from occurring.

Treatment of disease: To treat appendicitis antibiotics should be utilized for treatment against the bacteria. Pain medication should not be utilized until after the diagnosis because they can mask the amount of pain the patient is experiencing. Laparoscopic removal of the appendix is the primary treatment when a patient is experiencing acute appendicitis and is termed an appendectomy (Capriotti & Frizzell, 2020). The patient presented to the ER with severe RLQ abdominal pain, and it was determined through testing that the patient was suffering from acute appendicitis which resulted in an appendectomy performed the same day.

Assessment	
General	The patient is alert and oriented x4 to person, place, and time, well groomed, and no acute distress. Patient's speech is clear and logical. Patient has the ability to follow commands.
Integument	The patient's skin is pink, dry, and warm with no bruising. The patient has 3 incisions noted below the um[illegible] gauze, and bandages related to [illegible]
	[illegible]or. Patient denies any pain experienced with urination. The patient's intake during this shift is noted as 1296 mL and the [illegible]t urination reported at 02:00 3/22/24.
Gastrointestinal	The patient's current diet while at the hp consists of a normal diet. The bowel sounds are normal and active in all 4 quadrants and the client reports last BM as 3/21/2024 at 0800. The patient denies experiencing pain, bleeding, or change in bowel movements. The patient reports abdominal pain of 3/10 where the surgical incisions are located and bandaged. No palpation of abdomen was performed related to recent surgical procedure. No swelling, distention, drainage, or bleeding noted at the site of surgical incisions. The patient does not have a drain at surgical site and there are no other scars, incision sites, ostomy sites, nasogastric tubes, feeding tubes, or wounds noted.
Musculoskeletal	All extremities upper and lower noted as pink, warm, dry, and symmetrical. Cap refill is less than 3 seconds on fingers and toes bilaterally with no signs of clubbing or cyanosis. ROM noted in all extremities as full range, hand grips and pedal push/pulls noted as normal with equal strength bilaterally, and Homans sign negative bilaterally. No edema noted in all 4 extremities. Pulses 2+ bilaterally throughout. Patient can perform all ADL's independently with a family member or staff member providing stand by assistance as a safety precaution due to patient's previous reports of dizziness.
Neurological	Patient appears well groomed with no signs of distress and is alert and oriented x4 to person, place, time, and situation. Normal cognition noted. Speech is clear and logical. The patient can follow commands appropriately and maintains the ability to open their eyes appropriately. The patient is able to awaken when queued vocally or through touch. The patient's behavior is appropriate for her age and the situation.
Most recent VS (highlight if abnormal)	**Time:** 02:00 **Temperature:** 36.8 C/98.2 F

Relevant Lab Values/Diagnostics

Abnormal lab values include an elevated PH (7.35-7.45) of 8.0 which can be related to the loss of fluids from vomiting and diarrhea associated with appendicitis. An elevated WBC (4,500 – 11,000 /uL) of 13.85 /uL and can be related to the patient's inflammation and infection experienced related to appendicitis. A decreased RDW (40.0-55.0 /fL.) 12.0 /fL and can be related to the diagnosis of appendicitis and the inflammation associated with the disease. An increased ANC (1.5-8.0/mm3) 9.99/mm3 and can be related to the patient's inflammation due to infection related to appendicitis.

Imaging obtained for this patient included an ultrasound of the abdomen. The findings included the measurement of the appendix noted as 7 mm and noncompressible with a small volume of fluid at the tip noted. Acute appendicitis is noted as a concerning finding and notes the finding as consistent with appendicitis and notes the finding located in the RLQ as a tubular filled structure in a bind near the iliac vessels.

Medical History

Previous Medical History: The patient reports a history of anxiety, depression, mild scoliosis, and a vitamin D deficiency.

Prior Hospitalizations: N/A

Past Surgical History: N/A

Social needs: N/A

Active Orders

- Regular diet until discontinued. A regular diet can be followed this surgical procedure.
- Vital signs obtained every four hours. It is important to obtain the patient's vitals often following surgery related to the medications being utilized for pain and the effects that could affect the patient's vitals specifically blood pressure.
- Increase activity as tolerated until discontinued and ensure morning ambulation. It is important to ambulate after a surgical procedure to promote blood blow and to assist in the prevention of pneumonia and constipation.
- Discharge patient 3/22/24 at 1351. Patient is ready for discharge because nausea, pain, and dizziness are now controlled. The patient reports she can ambulate without any dizziness or discomfort.

	Route: Orally **RR:** 16 **HR:** 85 **BP and MAP:** BP: 102/57 MAP: 72mmHg **Oxygen saturation:** 100% with room air utilized. **Oxygen needs:** No oxygen needs required outside of room air.
Pain and Pain Scale Used	The patient reports her pain level as 3/10 on the numeric pain scale ranging from 0-10.

Nursing Diagnosis 1	**Nursing Diagnosis 2**	**Nursing Diagnosis 3**
Acute pain as evidenced by patient report of pain experienced measured by the numeric scale related to surgical procedure experienced (Phelps, 2023).	Risk for imbalanced fluid volume related to fluid volume loss after a surgical procedure (Phelps, 2023).	Risk for infection related to an invasive procedure (Phelps, 2023).
Rationale After appendectomy, the patient experienced acute pain due to the surgical incision and manipulation of abdominal tissues. Post operation inflammation and stretching of the abdominal wall tissues also contributed to the patient's post-surgical pain experienced (Phelps, 2023).	**Rationale** Ater an appendectomy the patient may experience fluid volume loss related to a decrease in oral intake or an increase in fluid loss from vomiting, diarrhea, or wound drainage. A result of diuresis from pain medications may also occur. This may lead to dehydration resulting in a decreased volume of blood (Phelps, 2023).	**Rationale** Providing early infection detection provides the promotion of prevention of the infectious process following an invasive procedure (Phelps, 2023).
Interventions **Intervention 1:** Asses the patient's pain level utilizing a numeric pain scale frequently. Also assess the characteristic's, location, quality, and intensity of the pain experienced. Administer pain medication as prescribed to assist in pain management (Phelps, 2023). **Intervention 2:** Assist the patient with	**Interventions** **Intervention 1:** Vital signs monitored frequently for changes because of altered fluid status (Phelps, 2023). **Intervention 2:** Collection and evaluation of serum electrolyte levels. The alteration in fluid levels may affect electrolyte levels resulting in further	**Interventions** **Intervention 1:** Monitoring and recording the patient's temperature every four hours following a surgical procedure assists in the prevention and detection of infection. Report elevations in temperature immediately to the provider (Phelps, 2023).

management of their pain by promoting relaxation techniques. These techniques include guided imagery, meditation, aromatherapy, deep breathing, and progressive muscle relaxation. Provide verbal instruction as well as a printout if the patient is interested in specific techniques (Phelps, 2023).	complications (Phelps, 2023).	**Intervention 2:** Performing hand hygiene before and after providing direct patient care assists in the prevention of infection and is the best prevention method utilized to assist in the avoidance of spreading pathogens (Phelps, 2023).
Evaluation of Interventions Patient reports that pain level has decreased from a 6/10 to a 3/10 and is now manageable. Medication was provided as needed to assist in pain relief. The patient was accepting of information provided about relaxation techniques and requested print outs at the time of discharge. The patient was motivated to utilize techniques other than medication to provide comfort and decrease her pain level.	**Evaluation of Interventions** The patient's vital signs are monitored every four hours without any significant changes noted. The patient is instructed upon discharge to contact the physician's office if there is a significant change in her vital status or her pain level. The patient's electrolytes remain within an acceptable range and the patient is instructed to continue maintaining proper hydration after her discharge from the hospital.	**Evaluation of Interventions** The patient's temperature was monitored every four hours and upon discharge the patient was instructed to contact the physician's office if a significant change in the patient's temperature occurred. Staff performed hand hygiene before entering the room and before interacting with the patient directly. Hand hygiene was completed after direct contact with the patient and again upon exiting the patient's room. The patient and family were educated about the importance of hand hygiene, specifically during direct contact with the patient's wounds. It was also explained how it could directly affect the patient's health status and recovery if the patient experienced an infection during the recovery process.

References (3):

Capriotti, T., & Frizzell, J. P. (2020). *Pathophysiology: Introductory concepts and clinical perspectives*. (2nd ed.). F.A. Davis Company.

Learning, J. & B. (2022). *Nurse's drug handbook 2023*. Jones & Bartlett Learning.

Phelps, L. L. (2023). *Nursing diagnosis reference manual*. Wolters Kluwer.