N431 Concept Map

Lakeview College of Nursing

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Demographic Data

Date of Admission: 12/10/21

Chief complaint: RLQ excruciating pain

Admission Diagnosis: Appendicitis

Age: 14 years old

Gender: Male

Race/Ethnicity: African American

Allergies: n/a

Code Status: Full Code (assumed since he is a minor)

Height in cm: n/a

Weight in kg: 68.2 kg

Psychosocial Development: The patient's psychosocial development is appropriate for his age. He is dressed appropriately for the season, hygiene and grooming normal for age and gender. He lives at home with his mom and three younger brothers. The patient has a strong support system in his family and friends and his inner-city neighborhood.

Cognitive Developmental Stage: The patient is a minor and is accompanied by his mother. He has no cognitive or developmental delays. This patient is in the formal operational stage of cognitive development, at 14 years old he can use logic and think abstractly, come up with theories and consider possibilities (Ansorge, 2020). He can comprehend his diagnosis, condition, and verbalize any concerns he

has with the assistance of his mother. I also utilized a childcare specialist to help facilitate conversation and reduce fear and anxiety.

Braden Score: n/a

Fall Score: n/a

Infection Control Precautions: Standard Precautions

Medical History

Previous Medical History: n/a

Prior Hospitalizations: n/a

Previous Surgical History: n/a

Social History: JW lives at home with his mom and three younger brothers. He is athletic and active and has a strong social network of friends and family. No known drug or alcohol use.

Admission History

On 12/10/21 this 14-year-old male presented to the emergency department (ED) because he had woken up at 2 am in “excruciating” pain. The pain was generalized in his abdomen around the umbilicus but has progressively gotten worse. He reported that he took 400mg of ibuprofen in the morning and it helped some but now this afternoon his pain is worse and is localized to the right lower quadrant (RLQ). He reports increased pain with walking and moving, and that he has some relief when he lies down in a fetal position. JW reported emesis x3 after drinking orange juice for breakfast. He has not had anything to drink since, and no further emesis but he is experiencing nausea.

Pathophysiology

The appendix is a pouchlike organ that extends from the meeting point of the small intestine and large intestine, appendicitis is the inflammation of this organ (Capriotti, 2020). In the United States there are about 10/100,000 people each year who are affected by appendicitis, typically affecting children and young adults, ages 10-30, but can also occur in the elderly (Capriotti, 2020). There are several risk factors for appendicitis including, consuming a low fiber diet, family history of appendicitis, being a male, bacterial or viral infections, or trauma to name a few (Capriotti, 2020). Kinking of the intestines or blockage by calcified stool can cause the appendix to become inflamed, resulting in increased pressure that narrows the lumen. A narrow lumen causes reduced blood flow to the appendix resulting in mucus buildup, which creates the perfect environment for bacterial growth (Hinkle & Cheever, 2018). An untreated appendicitis can rupture contaminating the peritoneal cavity with bacteria, mucus, and white blood cells (Hinkle & Cheever, 2018). Some signs and symptoms of appendicitis include dull pain at the umbilicus, sharp pain in the right lower quadrant that gets worse when moving, constipation, nausea, fever, and vomiting (Hinkle & Cheever, 2018). In basic health assessment lab, they teach that there are several ways to assess for appendicitis including pressing on the lower right quadrant (McBurney's point), pressing on the opposite side to check for rebound tenderness (Rovsing's sign), rotating of the leg/ hip to check for positive Obturator sign, and flexion of the right hip to assess for pain which would indicate a positive Psoas sign. In addition to the physical exam assessment, there are diagnostic tests such as pelvic and abdominal CT scans with or without contrast, ultrasound, abdominal X-ray, lab tests to check for elevated white blood cells that will be done to diagnose appendicitis (Capriotti, 2020). In some cases, a patient with appendicitis can be given antibiotics to treat the appendicitis, but in other cases when a rupture has occurred, an appendectomy is necessary to remove the appendix (Capriotti, 2020). A low fiber diet results in calcified stool which can block the appendix and cause inflammation and bacterial overgrowth (Capriotti, 2020). My patient has been experiencing abdominal pain in the right lower quadrant but at times all over abdominal pain, vomiting and nausea. He has a fever of 100.5F, his blood pressure is elevated, he is tachycardic and reports sharp, cramping pain 8/10, which can be a sign of peritonitis. During a thorough abdominal assessment, pressing on the lower right quadrant (McBurney's

point) was positive which is also consistent for appendicitis. He had an abdominal ultrasound done which revealed an enlarged, non-compressible appendix. His WBC's and neutrophils were also elevated. The elevated WBCs and neutrophils are indicative of the body's immune response to fighting off a bacterial infection (Capriotti, 2020). My patient came into the hospital on 12/10 and was diagnosed with acute appendicitis and required a laparoscopic appendectomy. In the hospital, he was put on morphine for pain, ondansetron for nausea, ceftriaxone and metronidazole antibiotics to help fight the infection and decrease his WBC's and neutrophils. He was also started on normal saline to assist with hydration and fluid and electrolyte balance. Following his surgery, he was kept on the same medications, but the normal saline was replaced with D5 ½ NS with 20 mEq KCl used for fluid and electrolyte balance until he was able to tolerate PO liquids. He has dressing on his incision sites, but no drains were required. His diet will be advanced as tolerated which will aid in his healing and enable him to have a bowel movement.

Pathophysiology References (2) (APA):

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

Hinkle, J. L., & Cheever, K. H. (2018). *Brunner & Suddarth's textbook of medical-surgical nursing* (14th ed.). Wolters Kluwer.

Lab values

WBC

Normal: 5-10

Patient's: 14.5 (increased)

Rationale: Increased in my patient due to acute appendicitis. Indicative of infection. The immune system responds by increases the number of WBC to fight the infection (Capriotti, 2020).

Neutrophils

Normal: 31.0-71.1

Patient's: 88 (increased)

Rationale: Neutrophils are the first responders to fight off bacterial infections (Capriotti, 2020).

Na

Normal: 134-144

Patient's: 133 (decreased)

Rationale: Slight decrease in Na is indicative of electrolyte imbalances due to my patient vomiting x3 and not eating or drinking since. Fluids should be given to rehydrate him, and electrolytes should continue to be monitored to ensure proper hydration status and electrolyte balance (Capriotti, 2020).

Lactate

Normal: 0.6-2.2 mmol/L

Patient's: 4.1 (increased)

Rationale: Increased lactate can occur from tissue ischemia or shock. Due to the appendicitis in my patient (Pagana et al., 2022).

CRP

Normal: < 10 mg/L

Patient's: 55 (increased)

Rationale: Increased CRP indicates inflammation. My patient has an inflamed appendix (Pagana et al., 2022).

Urine

Normal: Yellow/Clear

Patient's: Dark amber

Rationale: Dark colored urine is caused by dehydration and can also be caused by infection. (Pagana et al., 2022). My patient had emesis x3 and appendicitis.

Lab Correlations Reference (1) (APA):

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

Pagana, K. D., Pagana, T. J., Pagana, T. N., & Pagana, K. D. (2022). *Mosby's Manual of Diagnostic and Laboratory tests*. Elsevier.

Diagnostics

On 12/10 my patient had an abdominal ultrasound. An ultrasound is a painless, noninvasive test that uses sound waves to create a picture of the inside of the abdomen, allowing the doctor to see the structure and movement of the internal organs. My patient had been experiencing abdominal pain mostly in the RLQ that worsened with movement. One of the tests used to confirm diagnosis of appendicitis is an abdominal ultrasound which can view abnormalities such as changes in size and shape, if there is a rupture, and fluid collection (Capriotti, 2020).

Current Medications

1. **morphine sulfate**

Class: Opioid analgesic

Dose: 2 mg

Route: IV

Frequency: Q2H PRN

Reason client is taking Pain management

Assessments: Monitoring my patient's oxygen level/02 saturation, pulse, and lung sounds before and after administering morphine.

2. **ondansetron**

Class: Selective serotonin receptor antagonist

Dose: 4mg

Route: IV

Frequency: Q4H PRN

Reason client is taking: to alleviate nausea

Assessments: Monitoring my patient for decreased bowel activity

3. **ceftriaxone sodium**

Class: cephalosporin/antibiotic

Dose: 1g

Route: IV

Frequency: 1 time

Reason client is taking: to treat infection

Assessments: Monitor and assess my patient's bowel pattern

4. **metronidazole**

Class: Nitroimidazole/Antiprotozoal

Dose: 500 mg

Route: IV

Frequency: Q12H

Reason client is taking: to treat infections

Assessments: Monitor CBC and culture and sensitivity if therapy lasts longer than 10 days or in a second dose is needed.

Medication reference:

Jones & Bartlett Learning. (2020). *2020 Nurse's Drug Handbook.* Burlington, MA

Physical Assessment

General:

Alertness: A & O x 4

Distress: Tense and uncomfortable with sharp, cramping abdominal pain of 8/10, distress noted

Overall appearance: This patient has normal grooming, and hygiene for age and gender.

Integument:

Skin color: Normal color for ethnicity. Cap refill <3 seconds.

Character: Dry, skin integrity intact, hair soft with normal distribution for age and gender

Temperature: Warm

Turgor: Skin turgor assessed with immediate recoil, no tenting

Rashes: No rashes noted.

Bruises: n/a

Wounds: n/a

Braden Score: n/a

Drains present: Y☐ N ☒

Type: n/a

HEENT:

Head/Neck: Head normocephalic with symmetry of all facial features. Lips, tongue, and oral mucosa pink and moist.

Ears: n/a

Eyes: Bilateral PERRLA. Sclera is white bilaterally; conjunctiva is pink bilaterally.

Nose: n/a

Teeth: n/a

Cardiovascular:

S1, S2, S3, S4, murmur etc.: Clear S1 and S2. Heart sounds regular, pulses strong, equal with palpation at radial/pedal/post-tibial landmarks, brisk cap refill. Heart tones audible and regular, S1 and S2 noted over A-P-T-M cardiac landmarks with no abnormal beats or murmurs.

Cardiac rhythm (if applicable): n/a

Peripheral Pulses: n/a

Capillary refill: Less than 3 seconds

Neck Vein Distention: Y ☐ N ☒

Edema Y ☐ N ☒

Location of Edema: n/a

Respiratory: Breath sounds clear with equal aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, nonlabored respiratory effort on room air.

Accessory muscle use: Y☐ N ☒

Breath Sounds: Location, character Breath sounds clear with equal aeration on inspiration and expiration in all lobes anteriorly, posteriorly, and laterally, nonlabored respiratory effort on room air.

Gastrointestinal: Abdomen round, rebound tenderness in RLQ to gentle palpation. Rebound tenderness present in RLQ.

Auscultation Bowel sounds: BS + in all four quadrants, bowel sounds diminished/hypoactive

Last BM: n/a

Palpation: Pain, Mass etc.: Abdomen round, rebound tenderness in RLQ to gentle palpation. Rebound tenderness present in RLQ.

Inspection:

Distention: No distention noted.

Incisions: Abdominal incision from laparoscopic appendectomy

Scars: n/a

Drains: None

Wounds: n/a

Genitourinary:

Color: Dark amber

Character: Clear

Quantity of urine: n/a

Pain with urination: Y ☐ N ☒

Dialysis: Y ☐ N ☒

Inspection of genitals: n/a

Catheter: Y ☐ N ☒

Type: n/a

Size: n/a

Musculoskeletal:

Neurovascular status: n/a

ROM: n/a

Supportive devices: N/A

Strength: n/a

ADL Assistance: Y ☐ N ☒

Fall Risk: **Y ☐** **N ☒**

Fall Score: n/a

Activity/Mobility Status: Patient can ambulate on his own

Independent (up ad lib): **Y ☒**

Needs assistance with equipment n/a

Needs support to stand and walk n/a

Neurological:

MAEW: **Y ☐** **N☒**

PERLA: **Y ☒** **N☐**

Strength Equal: **Y ☒** **N☐**

Orientation: Oriented to person, place, time, and situation

Mental Status: Cognitive. No changes in mental status observed.

Speech: Clear

Sensory: No sensory deficits noted in the upper and lower extremities bilaterally

LOC: alert

Vital signs: 12/10/21 upon arrival to ED

Respiratory Rate:20

Temperature: 100.5 F (oral)

Oxygen Saturation: 99% RA

Blood Pressure: 142/76

Pulse: 106

The patient has a fever, tachycardia, and a slightly elevated blood pressure. He reports his pain level as an 8/10 on a 0 -10 pain scale. His vitals are elevated due to pain, and infection but they are still considered stable

Pain assessment: Pain was assessed on arrival using the numeric scale. The patient

reported his pain level to be at a 8 out of 10. **Characteristics:** Severe, cramping, localized to the RLQ. **Intervention:** Morphine 2mg IV Q2H PRN.

Active Orders

Encourage ambulation and use of an incentive spirometer.

Diet: Advance diet as tolerated, maintain fluids until patient can drink and eat.

Vital signs: Monitor vital signs frequently to assess patient's status. Frequent abdominal and pain assessment to determine if the patient is improving, or to notice potential complications. Contact provider for increased pain, signs/symptoms of infection or worsening condition.

Nursing Diagnoses

Nursing diagnosis 1: Impaired skin integrity related to appendectomy as evidenced by surgical incisions

Rationale: Impaired skin integrity increases the risk of postoperative infection and delayed healing.

Interventions:

1. Clean and monitor the incisions daily, ensure clean and dry dressing is in place.
2. Look for redness, warmth, oozing and/or swelling which indicate the presence of infection.

Evaluation: The incision sites were assessed, absent of warmth, redness, swelling or drainage. Incision sites were cleaned and redressed, clean, dry dressing in place.

Nursing diagnosis 2: Deficient fluid volume related to inadequate food and fluid intake, as evidenced by dark amber urine

Rationale: My patient has not been eating or drinking due to pain, emesis x3, nausea prior to coming to the ED. He has been on NPO status due to the appendicitis and appendectomy

Interventions:

1. Assess vital signs, skin turgor for signs of dehydration
2. Monitor fluid intake and output

Evaluation: With my assessment I confirmed normal elasticity of skin, vitals were checked twice and stable. Fluids were on board and running until patient began drinking and eating PO.

Nursing diagnosis 3: Acute pain related to appendectomy as evidenced by sharp, crampy pain localized to the RLQ

Rationale: My patient is postop from appendectomy which causes acute pain that impairs his ability to get comfortable, rest and heal

Interventions:

1. Assess quality, location, severity, and duration of pain to determine discomfort level

2. Provide analgesics as prescribed, and reassess

Evaluation: With each assessment, pain was assessed, and my patient reported sharp, crampy pain at a level of 8/10 initially. After medication and the appendectomy, he reported dull, achy RLQ pain at a level of 5/10.

References

Ansorge, R. (2020). *Piaget cognitive stages of development*. WebMD. Retrieved August https://www.webmd.com/children/piaget-stages-of-development.

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

Hinkle, J. L., & Cheever, K. H. (2018). *Brunner & Suddarth's textbook of medical-surgical nursing* (14th ed.). Wolters Kluwer

Jones & Bartlett Learning. (2020). *2020 Nurse's Drug Handbook.* Burlington, MA

Pagana, K.D., Pagana, T. J., Pagana, T.N. (2021). *Mosby's diagnostic and laboratory test reference* (15th ed). Elsevier