Adult Health Nursing (1)
lecture 4
Intestinal Obstruction

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2024- 2025

Learning Objectives:

- **Define** intestinal obstruction and its different types (mechanical, functional, small bowel, large bowel).
- **Identify** common causes of intestinal obstruction.
- the pathophysiology of intestinal obstruction, including the effects on fluid and electrolyte balance, and the risk of complications.
- **Describe** the clinical manifestations of intestinal obstruction, including pain, vomiting, distention, and altered bowel habits.
- **Discuss** the diagnostic tests used to confirm intestinal obstruction, such as abdominal X-rays, CT scans, and blood tests.
- **Explain** the importance of early identification and intervention in cases of intestinal obstruction.

Intestinal Obstruction

Intestinal obstruction is a condition where the passage of food and fluids through the intestines is blocked. It can be classified into two main types:

1. Mechanical Obstruction:

- **Causes:**
- **Adhesions:** Scar tissue bands that form after surgery or inflammation can cause the intestines to become twisted or kinked.
- **Intussusception:** A segment of the intestine telescopes into an adjacent segment, blocking the flow of contents

- **Volvulus:** A loop of the intestine twists around itself, obstructing the flow of blood and contents
- **Tumors:** Benign or malignant tumors can grow within or outside the intestine, blocking the passageway.
- **Foreign bodies:** Ingested objects that become lodged in the intestines can cause a blockage.
- **Fecal impaction:** A large accumulation of hardened stool in the rectum or colon can block the passage of other stool.

- **Pathophysiology:**
- The blockage leads to an accumulation of fluids and gas within the affected segment of the intestine, causing distention and pain.
- The distention can impair blood flow to the intestinal wall, leading to ischemia and necrosis (tissue death).
- If the obstruction is not relieved, it can lead to perforation of the intestine, peritonitis, and sepsis.

Functional Obstruction:

- **Causes:**
- **Ileus:** A condition where the intestines stop moving due to paralysis or decreased peristalsis. This can be caused by various factors, including surgery, inflammation, electrolyte imbalances, or medications.
- **Pseudo-obstruction:** A rare condition that mimics mechanical obstruction but has no physical blockage. It is often associated with neurological disorders or medications.

- **Pathophysiology:**
- The lack of peristalsis prevents the movement of food and fluids through the intestines, leading to distention and pain.
- In pseudo-obstruction, the underlying cause is often a neurological or muscular dysfunction that affects the intestines.

Specific Types of Obstruction:

- **Small Bowel Obstruction:** This is more common and often presents with acute abdominal pain, vomiting, nausea, and distention.
- **Large Bowel Obstruction:** This is less common and usually presents with constipation, abdominal cramping, and bloating.

Common Causes of Intestinal Obstruction:

- Adhesions
- Intussusception
- Volvulus
- Tumors
- Ingestion of foreign bodies
- Fecal impaction
- Ileus
- Pseudo-obstruction

Clinical Manifestations of Intestinal Obstruction

Pain

- **Colicky pain:** Intermittent, cramping pain that comes in waves.
- **Location:** Typically in the abdomen, but the specific location can vary depending on the site of the obstruction.
- **Severity:** Can range from mild to severe, often increasing as the obstruction worsens.

Vomiting

- **Frequency:** May be frequent and persistent.
- **Content:** Initially contains undigested food, but later may become bile-stained or fecal-smelling.

Severity: Can be projectile in severe cases.

Distention

- **Abdominal swelling:** The abdomen becomes distended and bloated due to the accumulation of gas and fluid.
- **Visible peristalsis:** In some cases, the movement of the intestines can be seen through the abdominal wall.

Altered Bowel Habits

- **Constipation:** Inability to pass stools or gas.
- **Diarrhea:** In some cases, particularly with partial obstructions, diarrhea may occur.

Diagnostic Tests for Intestinal Obstruction

Several diagnostic tests can be used to confirm the presence of intestinal obstruction:

Abdominal X-rays

- **Plain films:** Can show gas-filled loops of the intestine, indicating an obstruction.
- **Upright and supine views:** Help to identify free air in the abdomen, which may suggest perforation.

CT Scan

- **More detailed images:** Provides a more accurate visualization of the intestines and the location of the obstruction.
- **Can identify the cause:** Can help to determine the underlying cause of the obstruction, such as a tumor or adhesions.

Blood Tests

- **Electrolyte imbalance:** Can reveal electrolyte imbalances that may occur due to vomiting and fluid loss.

CBC: A complete blood count can help to assess for signs of infection or dehydration.

Complications of Intestinal Obstruction:

Perforation:

- A tear or rupture in the intestinal wall.
- Can lead to the leakage of intestinal contents into the abdominal cavity, causing peritonitis.

Peritonitis:

- Inflammation of the peritoneum, the lining of the abdominal cavity.
- Can be caused by perforation or other factors related to obstruction.
- Can lead to sepsis if the infection spreads.
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Sepsis:

- A life-threatening condition caused by the body's response to an infection.
- Can occur if bacteria from the intestines enter the bloodstream.

Ischemia:

- Reduced blood flow to the affected portion of the intestine.
- Can lead to tissue damage and necrosis.

Fluid and Electrolyte Imbalances:

- Can occur due to vomiting, diarrhea, and decreased fluid intake.
- Can lead to dehydration, electrolyte imbalances, and kidney failure.

Shock:

- A life-threatening condition characterized by inadequate blood flow to the body's tissues.
- Can occur due to fluid loss, infection, or other complications of intestinal obstruction.

Adhesions:

- Bands of scar tissue that can form in the abdomen after surgery or other injury.
- Can lead to recurrent intestinal obstruction.

Nursing Interventions for Intestinal Obstruction

Pain Management

- **Assess pain frequently:** Use a validated pain scale to accurately assess the patient's pain level.
- **Administer analgesics as prescribed:** Opioids are often used to manage pain, but be aware of their potential for causing constipation.
- **Non-pharmacological interventions:** Consider non-pharmacological pain management techniques such as deep breathing, relaxation exercises, and positioning.

1. **Nasogastric Tube (NGT) Decompression:**

- **Insertion:** An NGT is inserted to decompress the stomach and relieve abdominal distention.
- **Drainage:** Drainage is monitored, and the tube may be irrigated to prevent obstruction.
- **Effectiveness:** Bowel sounds are assessed to determine the effectiveness of decompression.

Fluid and Electrolyte Balance

- **Monitor fluid intake and output:** Carefully monitor the patient's fluid intake and output to assess for dehydration or fluid overload.
- **Administer intravenous fluids as ordered:** Replace lost fluids and electrolytes as needed.
- **Monitor electrolyte levels:** Regularly monitor electrolyte levels, especially potassium, sodium, and chloride.

Bowel Decompression

- **Nasogastric tube insertion:** Insert a nasogastric tube to decompress the stomach and relieve abdominal distention.
- **Nasogastric tube drainage:** Monitor the amount and character of drainage. Irrigate the tube as needed to prevent obstruction.
- **Assess for bowel sounds:** Listen for bowel sounds to assess the effectiveness of decompression.
- **NPO status:** Patients may be placed on nothing by mouth (NPO) to rest the gastrointestinal tract.

Monitoring Vital Signs, Bowel Sounds, and Abdominal Distention

- **Monitor vital signs:** Regularly assess the patient's blood pressure, heart rate, respiratory rate, temperature, and oxygen saturation.
- **Assess bowel sounds:** Listen for bowel sounds to assess the status of the gastrointestinal tract.

Monitor abdominal distention: Assess the patient's abdomen for distention, tenderness, and guarding.

Non-Surgical Management Strategies:

Indications for Medical Management:

- **Partial bowel obstruction:** When the obstruction is incomplete and the patient's condition is stable.
- **Mild symptoms:** Patients with mild symptoms and no signs of peritonitis or strangulation.
- **High surgical risk:** Patients who are not suitable for surgery due to underlying medical conditions.

It's important to note that medical management is often a temporary measure, and surgical intervention may become necessary if the patient's condition deteriorates or if the obstruction is not resolved. Please consult with a healthcare professional for personalized advice and treatment recommendations.

1. **Medications:**

- **Prokinetic agents:** Drugs like metoclopramide can help stimulate the movement of food through the intestines.
- **Antispasmodics:** Medications like hyoscyamine can relax the intestinal muscles.
- **Laxatives:** In some cases, laxatives may be used to promote bowel movement.

2. **Enemas:**

- **Water or saline enemas:** These may be used to stimulate bowel movements and relieve constipation.

Surgical Management

Indications for Surgical Intervention

- **Complete bowel obstruction:** When the obstruction is complete and cannot be managed non-surgically.
- **Strangulation:** When the blood supply to the affected bowel is compromised.
- **Peritonitis:** When inflammation of the peritoneum occurs due to the obstruction.
- **Intussusception:** When a part of the intestine slides into an adjacent part.
- **Volvulus:** When the intestine twists on itself.

Surgical Procedures

- **Bowel resection:** Removal of the affected portion of the bowel.
- **Anastomosis:** Connecting the remaining ends of the bowel.
- **Bypass:** Creating a new pathway for the flow of intestinal contents.

Postoperative Care

- **Wound care:** Monitor the incision for signs of infection, such as redness, swelling, and drainage.
- **Pain management:** Administer analgesics as prescribed to manage postoperative pain.
- **Monitoring for complications:** Monitor for complications such as wound infections, ileus, and anastomotic leaks.

Thank you for listening