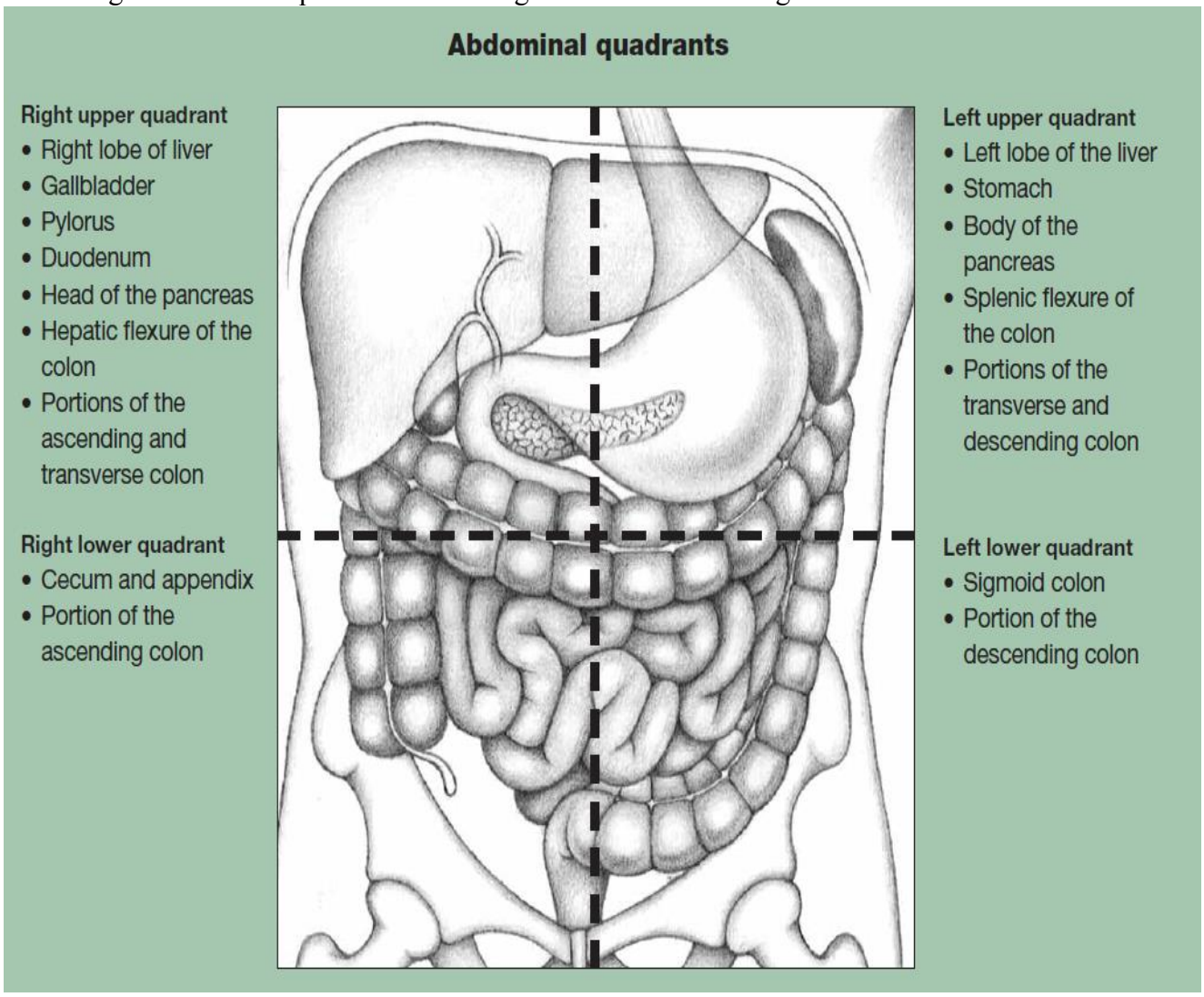
INTESTINAL OBSTRUCTION

OVERVIEW:

1. *Definition*
2. *Classification*
3. *Common causes of obstruction*
4. *Clinical features*
5. *Investigation*
6. *Treatment*
7. *Nursing assessment.*
8. *Nursing care.*

What is a bowel obstruction?

A bowel obstruction, or intestinal obstruction, is anything that stops, delays, or changes the advancing of solid and liquid material through the small and/or large bowel.



INTRODUCTION:

- Accounts for 5% of all acute surgical admissions
- Patients are often extremely ill requiring prompt assessment, resuscitation and intensive monitoring.

Obstruction

A mechanical blockage arising from a structural abnormality that presents a physical barrier to the progression of gut contents.

Ileus

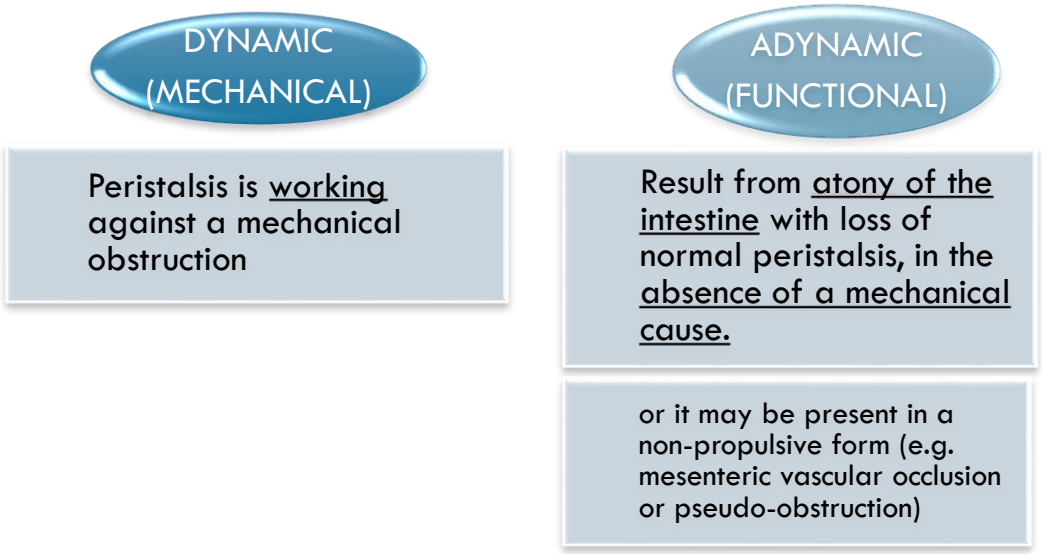
Is a paralytic or functional variety of obstruction?

Obstruction is:

-Partial or complete

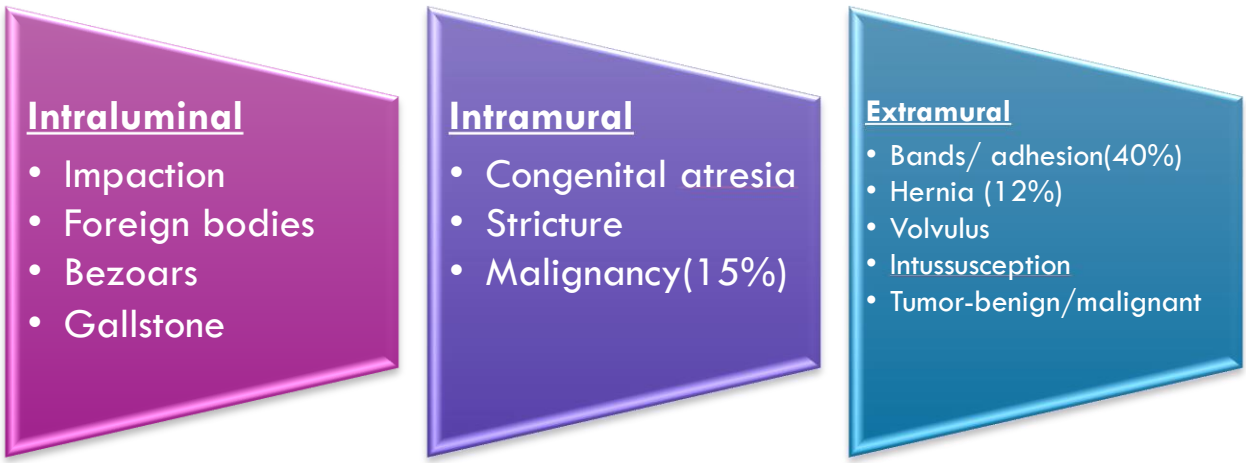
-Simple or strangulated.

CLASSIFICATION



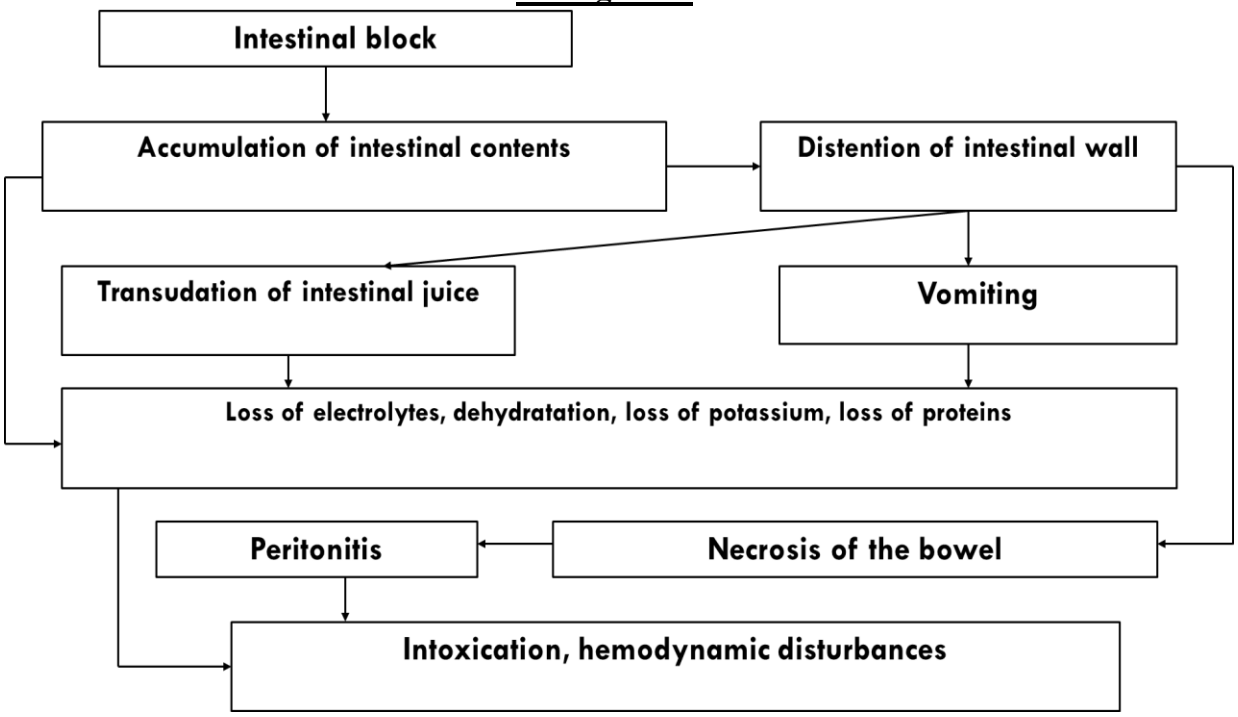
DYNAMIC OBSTRUCTION (MECHANICAL)

CAUSES OF I.O (DYNAMIC)



Intramural: within the walls of a cavity or hollow organ
Extramural: Occurring or situated outside of the walls or boundaries
-Bezoars are retained concretions of undigested vegetable material, hair, fruit or other ingested materials that forms in the gastrointestinal tract.

Pathogenesis



Presentation

Presentation may be-
1. Acute.
2. Chronic.
3. Acute on Chronic.
4. Sub-acute.

Clinical Feature

a. Pain.

b. Vomiting.

c. Distension.

d. Constipation.

Clinical Features Of Strangulation

a. Shock
b. Pain is never completely absent.
c. The presence and character of any local tenderness.

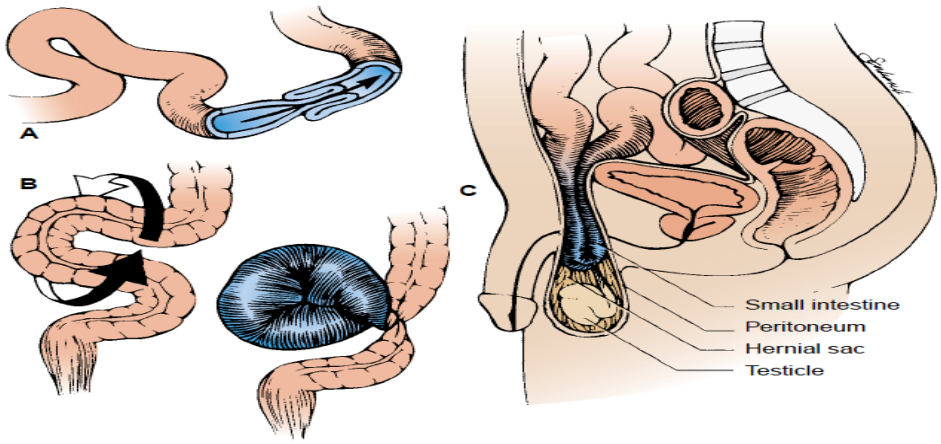
Late Manifestation:

1. Dehydration

2. Oliguria
3. Hypovolemic shock
4. Pyrexia
5. Septicemia
6. Peritonism
7. Respiratory embarrassment.

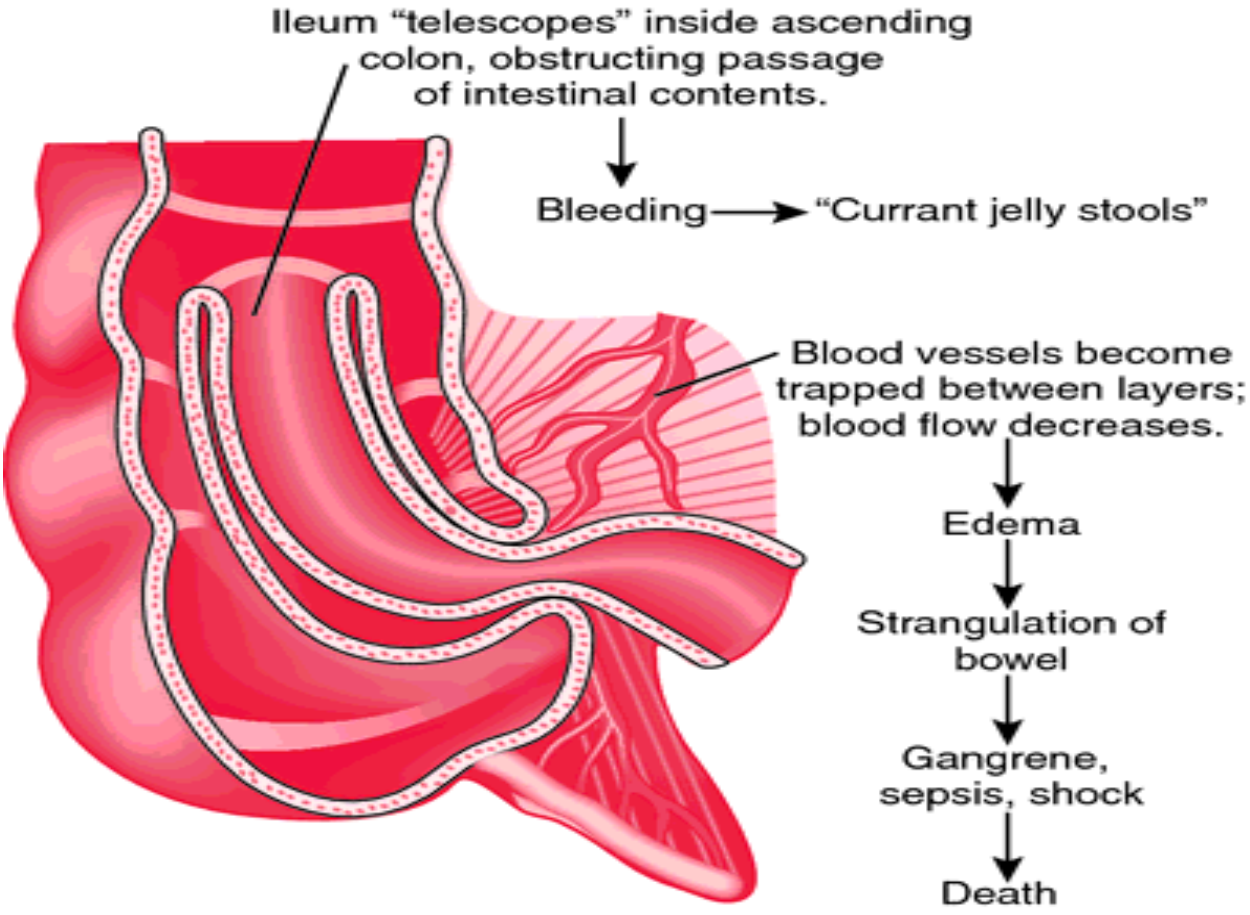
Table 38-5 • Mechanical Causes of Intestinal Obstruction

CAUSE	COURSE OF EVENTS	RESULT
Adhesions	Loops of intestine become adherent to areas that heal slowly or scar after abdominal surgery.	After surgery, adhesions produce a kinking of an intestinal loop.
Intussusception	One part of the intestine slips into another part located below it (like a telescope shortening).	The intestinal lumen becomes narrowed.
Volvulus	Bowel twists and turns on itself.	Intestinal lumen becomes obstructed. Gas and fluid accumulate in the trapped bowel.
Hernia	Protrusion of intestine through a weakened area in the abdominal muscle or wall.	Intestinal flow may be completely obstructed. Blood flow to the area may be obstructed as well.
Tumor	A tumor that exists within the wall of the intestine extends into the intestinal lumen, or a tumor outside the intestine causes pressure on the wall of the intestine.	Intestinal lumen becomes partially obstructed; if the tumor is not removed, complete obstruction results.



Three causes of intestinal obstruction.
(**A**) Intussusception invagination or shortening of the colon caused by the movement of one segment of bowel into another.
(**b**) Volvulus of the sigmoid colon; the twist is counterclockwise in most cases. Note the edematous bowel.

(**c**) Hernia (inguinal). The sac of the hernia is a continuation of the peritoneum of the abdomen. The hernial contents are intestine, omentum, or other abdominal contents that pass through the hernial opening into the hernial sac.



-volvulus: Intestinal volvulus is defined as a complete twisting of a loop of intestine around its mesenteric attachment site.
-incarceration: passage of a loop of intestine through a small orifice, e.g. inguinal canal, with resulting swelling, obstruction and occlusion of blood supply
-Obstruction: partial or complete blockage of the bowel that prevents the contents of the intestine from passing through
-intussusception: process in which there is telescoping of a proximal segment of intestine invaginates into the (distal) adjoining intestinal lumen.

Examination

1. PHYSICAL EXAMINATION

(a) *Inspection*
(b) *Palpation*
(c) *Percussion*
(d) *Auscultation*

2. Rectal Examination

Inspection

- In early stage 'visible peristalsis is the only sign.
- Abdominal distension is the late sign.
- Hernial orfices, surgical scars must be inspected.

Palpation

- During colic there may be muscle guarding. Slight tenderness may be present between attacks of pain.
- Tenderness and rigidity at the sight of obstruction usually indicates strangulation.

Percussion

- Only reveals resonant note of gaseous distension of bowel.

Auscultation

- Presence of loud borborygmi, conciding with intestinal colic is diagnostic.
- In case of intestinal obstruction "Silent abdomen" suggests paralytic ileus.

Rectal Examination

Presence of mass on rectal examination within or outside the lumen will give a clue to diagnosis. Presence or absence of feaces in rectum should be noted. Absence means obstruction is higher up. If present it should be studied for presence of occult blood, which include mucosal lesion e.g. cancer, intussusception or infarction. Sigmoidoscopy should be done if colonic obstruction is suspected.

Table 2. Differential Diagnosis of Abdominal Pain, Distension, Nausea, and Cessation of Flatus and Bowel Movements

Alternate diagnosis	*Clues*
Ascites	Acute liver failure, history of hepatitis or alcoholism
Medications (e.g., tricyclic antidepressants, narcotics)	Review of medications; diagnosis of exclusion
Mesenteric ischemia	History of peripheral vascular disease, hypercoagulable state, or postprandial abdominal angina; recent use of vasopressors
Perforated viscus/intra-abdominal sepsis	Fever, leukocytosis, acute abdomen, free air on imaging
Postoperative paralytic ileus	Recent abdominal surgery with no postoperative flatus or bowel movement
Pseudo-obstruction (Ogilvie syndrome)	Acutely dilated large intestine, history of intestinal dysmotility, diabetes mellitus, scleroderma

Special Investigation

(1) *Blood Examination*

(2) Radiological Examination

Management

There are three main measures: -

1. Gastrointestinal drainage.
2. Fluid and electrolyte replacement.
3. Relief of obstruction (surgical).

Supportive Management

Nasogastric Decompression

Fluid and Electrolytic Replacement

Antibiotics

Surgical

Obstructed / strangulated external hernia, internal intestinal strangulation and acute obstruction

1. Midline incision usually look on CAECUM
2. Operative decompression
3. Look at viability of intestine
4. Large bowel obstruction: colostomy

Immediate intervention:

Evidence of strangulation (hernia….etc)

Signs of peritonitis resulting from perforation or ischemia

In the next 24-48 hours

Clear indication of no resolution of obstruction (Clinical, radiological).

Diagnosis is unclear in a virgin abdomen

Viable:

-dark color comes lighter, peristalsis, shiny peritoneum, maesentery bleeds if pricked, firm intestinal musculature, pressure ring may or may not disappear

Non-viable:

-dark color remains, no peristalsis, dull and lusterless peritoneum, no bleeding if mesentery is pricked, flabby, thin, and friable intestinal musculature, pressure ring persist.

- ☑ Resuscitation then opened abdomen through midline incision
- ☑ Assess caecum : distension means large bowel involvement
- ☑ Removable lesion found in caecum, ascending colon, or proximal transverse colon→ right hemicolectomy should be performed
- ☑ Lesions is irremovable, a proximal stoma or ileo transverse bypass should be considered.

MANAGEMENT FOR LARGE BOWEL OBSTRUCTION

All patients require

- Adequate resuscitation
- Prophylactic antibiotics
- Consenting and marking for potential stoma formation

- At operation
  - Full laparotomy should be performed

    - Liver should be palpated for metastases
    - Colon should be inspected for synchronous tumours
- Appropriate operations include:
- Right sided lesions – right hemicolectomy
- Transverse colonic lesion – extended right hemicolectomy
- Left sided lesions – various options

Complications associated with intestinal obstruction repair

- Include excessive bleeding
- Infection
- Formation of abscesses (pockets of pus)
- Leakage of stool from an anastomosis
- Adhesion formation
- Paralytic ileus (temporary paralysis of the intestines)

Reoccurrence of the obstruction.

Obstruction by Adhesions

Adhesions And Bands

Cause for Adhesions

1.Ischaemic areas
2. Foreign material
3. Infection & Inflammation
4. Radiation enteritis
5. Drugs

Cause for Bands

Congenital

A string band following previous bacterial peritonitis.

A portion of greater omentum usually adherent to parictes.

Treatment

Initial **management** of Adhesions And Bands **is** based on I.V. rehydration and nasogastric decompression.

When obstruction is caused by an area of multiple adhesions, they should be freed by sharp dissection.

To prevent recurrence the bare area should be covered with omental grafts.Following release of band obstruction, the constriction sites that have suffered direct compression should be carefully assessed

Recurrent Obstruction Due To Adhesion

Procedures are:

- Ø Repeat adhesiolysis (enterolysis) alone.
- Ø Noble's plication operation.
- Ø Charles – Phillips transmesentric plication.
- Ø Intestinal intubation.

A dynamic Obstruction

Paralytic Ileus

It may be defined as a state in which there is failure of transmission of peristaltic waves secondary to neuromuscular failure.

Varietes

Following varieties are recognised :

1. Postoperative
2. Infection: Intra-abdominal sepsis
   - Ø Localised ileus.
   - Ø Generalised ileus.
3. Reflex ileus

4.Matabolic: Uraemia & Hypokalaemia are commonest contributory factor.

Management

The essence of treatment is prevention with the use of nasogastric suction and restriction of the oral intake untill bowel sounds and passage of flatus return.Treatment is according to cause but following general principle apply:-

1. Primary cause must be removed.
2. Gastrointestinal distension must be relieved.
3. Close attention to fluid and electrolyte balance is essential.
4. Use of peristalsis stimulant is recommended only in ressistant cases.
5. If paralytic ileus is prolonged, a laparotomy should be considered to exclude a hidden cause and facilitate bowel decompression.

Small intestinal pseudo-obstruction	**Colonic pseudo-obstruction (Ogilvie's syndrome,)**
✓This condition may be primary (i.e. idiopathic or associated with familial visceral myopathy) or secondary. ✓The clinical picture consists of recurrent subacute obstruction. ✓ The diagnosis is made by the exclusion of a mechanical cause. ✓Treatment consists of initial correction of any underlying disorder. Metoclopramide and erythromycin may be of use.	➢This may occur in an acute or a chronic form. ➢presents as acute large bowel obstruction. ➢Abdominal radiographs show evidence of colonic obstruction, with marked caecal distension being a common feature. ➢AXR shows colonic obstruction with marked caecal distension ➢Confirmation of absence mechanical cause by colonoscopy or single contrast water soluble barium enema or CT. ➢Once confirmed, treated by colonoscopic decompression

Acute Mesenteric Occlusion

Acute ischemic of mesenteric vessel.

Causes: mural thrombosis, atheromatous plaque from aortic aneurysm and valave vegetation from endocarditis features:

-sudden onset of severe abd. pain in pt with atherosclerosis

-persistent vomiting and defecation then passage of altered blood
-hypovolemic shock

Investigations:

- neutrophil leukocytosis
- Abd x-ray: absence of gas in thickened small intestines

Treatment:

- anti-coagulant
- embolectomy
- revascularization
- colectomy

NURSING DIAGNOSES

Based on the assessment data, the major nursing diagnoses may include the following:

- Imbalanced nutrition, less than body requirements, related to nausea and anorexia
- Risk for deficient fluid volume related to vomiting and dehydration
- Anxiety related to impending surgery.
- Risk for ineffective therapeutic regimen management related to knowledge deficit concerning the diagnosis, the surgical procedure, and self-care after discharge
- Impaired skin integrity related to the surgical incisions (abdominal and perianal), the formation of a stoma, and frequent fecal contamination of peristomal skin disturbed body image related to colostomy

Dr. Mohammed Hassan