

Surgery
Intestinal Obstruction

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Today we will be talking about intestinal obstruction

- Definition
- Review of Basics
- History and Examination
- Differential Diagnosis
- Investigation
- Fluid prescription
- Clinical algorithm

Definition

Clinical condition, due to; failure of the intestine (small or large) to pass gas, liquid and solid material.

Review of the Basics

- Pathophysiology
- The 3 pains / The 3 guts
- Causes

Intestinal Obstruction; Pathophysiology

- Blocked Lumen
 - Distension (solid, liquid, gas); Pain, vomit, constipation
 - Increased Wall tension; Perforation
 - Ischaemia
- Closed and Open loops

Closed and Open loops



Review of the Basics

- Pathophysiology
- The 3 pains / The 3 guts
- Causes

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The 3 Pains

- Visceral
- Referred
- Somatic

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Visceral Pain

- Sensation of the intestines is not the same as the sensation of the skin
- The gut does not mind being cut or burnt
- It does not like to be pulled or distended
- It does not like being irritated by things that are not normally present

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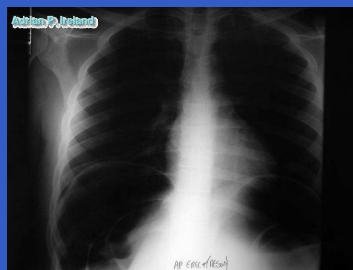
Referred Pain

Diaphragmatic irritation (pneumonia, pus, blood)

- Diaphragm is irritated
- Pain travels along the phrenic nerve (C3, C4, C5)
- Pain signals enter cord at C3–5
- Brain thinks that the pain is coming from the suprascapular nerves which supply the shoulder tip and enter the cord in the same place

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What is this?



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Somatic Pain

When the parietal peritoneum is inflamed;

- Pain is severe
- Breathing shallow
- Movement curtailed
- Tenderness marked

Those who feel pain the most have the most symptoms and abdominal tenderness

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The 3 guts

There are 3 main guts to be aware of when it comes to pain

- Fore gut

The 3 guts

There are 3 main guts to be aware of when it comes to pain

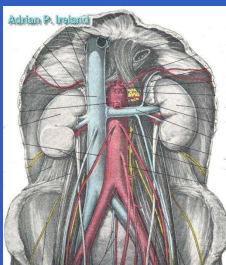
- Fore gut
- Mid gut

The 3 guts

There are 3 main guts to be aware of when it comes to pain

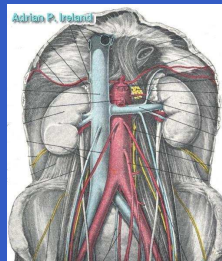
- Fore gut
- Mid gut
- Hind gut

The 3 guts; Based upon arterial supply



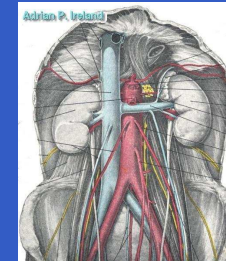
- Fore-gut
- Mid-gut
- Hind-gut

The Fore-gut



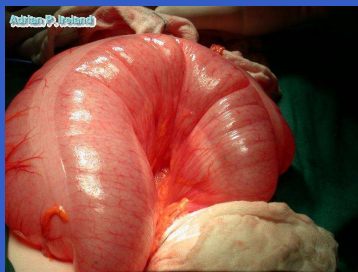
- In the distribution of the Coeliac artery
- Extends from the lower esophagus to half way down D2
- Pain is referred to the epigastrium

The Mid-gut



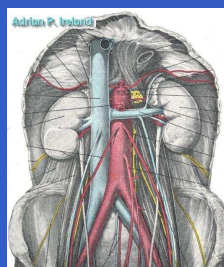
- In the distribution of the Superior Mesenteric artery
- Extends from half way down D2 to the distal transverse colon
- Pain is referred to the umbilicus

What is this?



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The Hind-gut



- In the distribution of the Inferior Mesenteric artery
- Extends from the distal transverse colon to the rectum
- Pain is referred to the hypogastrium

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Review of the Basics

- Pathophysiology
- The 3 pains / The 3 guts
- Causes

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Causes of Intestinal obstruction

Classification based upon;

- lumen, wall, outside and combinations (Explain all causes)
- open and closed loop (Identify dangerous types)
- simple and complex (Clinically useful)
- small intestine, large intestine (Clinical and Radiological)
- common and rare (Clinical)

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Lumen, Wall, Outside and Combinations

- Lumen; Gallstone, Beezoar, Foreign Body
- Wall; Stricture
- Outside; Volvulus, Hernia, Adhesions, Metastases
- Combinations; Intussusception

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Lumen

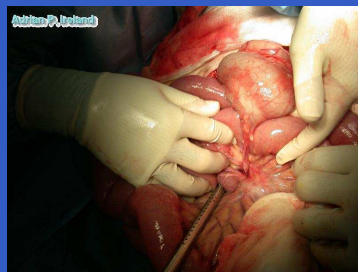


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Wall



Outside



Causes of Intestinal obstruction

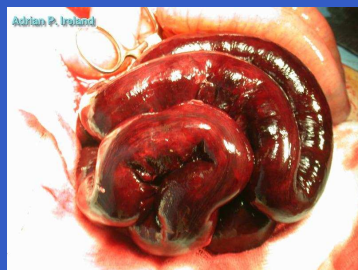
Classification based upon;

- lumen, wall and outside
- Small intestine, Large intestine
- common and rare

Small Intestine

- Post operative adhesions
- Stuck onto tumor or inflammatory mass somewhere
- Hernia; External, Internal
- Volvulus
- Intussusception
- Crohn's stricture
- Ischaemic stricture
- Tumors of the small intestine

Operative Findings; Small bowel volvulus



Large Intestine

- Colo-rectal cancer
- Volvulus; Sigmoid, Caecal
- Inflammatory Stricture

Causes of Intestinal obstruction

Classification based upon;

- lumen, wall and outside
- small intestine, large intestine
- **Common and Rare**

Common and Rare

- Common;
 - Post operative adhesions
 - Herniae; Groin, Femoral and Inguinal, Incisional
 - Colorectal Cancer
- Rare; Internal hernia

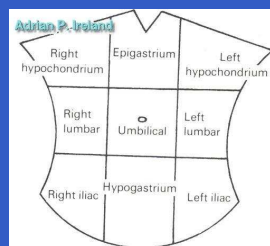
Presenting Complaint

- Abdominal Pain
- Vomiting
- Distension
- Constipation, even wind? (Complete, obstipation)
- Blood PR
- Energy, Appetite, Weight

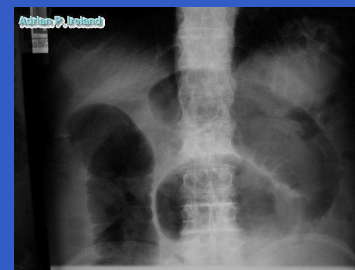
Pain

- Site
- Radiation
- Type
- Severity
- Onset and Duration
- Aggravating and Relieving factors
- Associated symptoms

Site



Whats this?

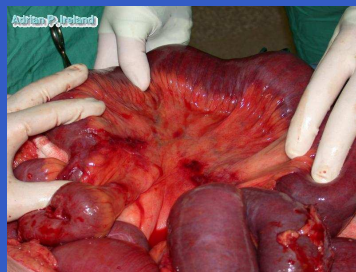


Whats this?



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Whats this?



Surgery: Final Med, Intestinal Obstruction - p.34/51

Past history

- Had this before?
- Previous surgery
- Other illness (drugs)

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Important other points in History

- Problems with anaesthetics
- Family history of problems with surgery
- Drug allergies (document; when, what happened)

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Examination

- Overall state; distressed, comfortable, cachexia
- Vital signs
- State of Hydration
- Abdominal Examination; distension, peristalsis, tenderness, mass
- Hernial orifices, Perineum, Rectal, Genitalia, Femoral Pulses

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Inspection



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Inspection



Clinical approach

- Has the patient got intestinal obstruction?
- Is it simple or complicated?
- What is the fluid deficit?
- What is the level of the obstruction?
- What is the cause of the obstruction?

Differential Diagnosis

- Obstruction or Pseudo-obstruction
 - May need Gastrograffin Enema
- Of the pain; Abdominal, Non Abdominal
- Of the distension; Fluid, Flatus, Fat, Faeces, Fetus, 'Friggen great Mass'

Investigation

- Urine; Urinalysis, Microscopy, C&S
- Pregnancy test
- Blood; U & E, FBC, Amylase, Muscle Enzymes, Calcium.
- Radiological; PFA, Erect CXR, CT scan, Enemas.

Radiology

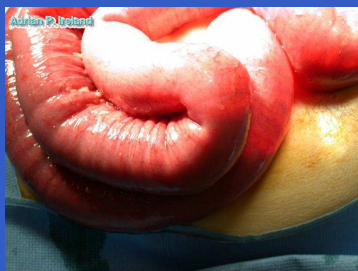
Quite simple, believe it or not!

- Gaseous distension, what is distended?
- Fluid levels, fluid distension
- Transition zone, any gas distally?
- Contrast wont pass, show mass

Radiology; PFA, Small bowel obstruction



Operative Findings; Small bowel obstruction



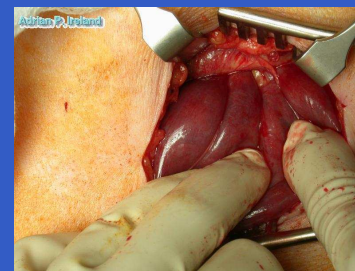
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Radiology; CT, Small bowel obstruction



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Operative Findings; Small bowel obstruction



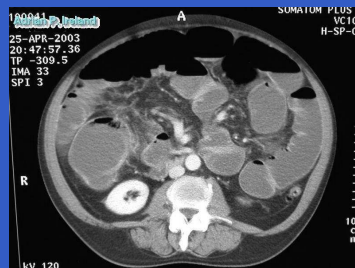
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Radiology; PFA, Large bowel obstruction



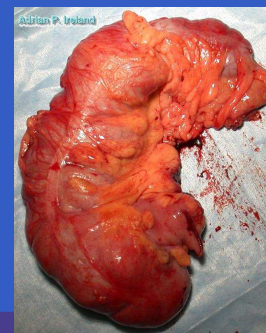
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Radiology; CT, Large bowel obstruction



Surgery Final Med. Intestinal Obstruction - p.46/51

Operative Findings; Large bowel obstruction



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Thanks



Questions please