



Hi !! These are some guiding signs :

(!) : Important note .

☒ : The Dr didn't mention this at all but it was found in the slides .

☆ : Is a risk question --> The Dr said that this point was important or asked a question about it .

- Have Q's ? found errors ? send them at : surgeryqueens@gmail.com

- Have fun studying ,, or .. at least اخلصوا النية لله .

Diseases of The Small Intestine :

Meckel's Diverticulum :

- λ It's an out pouching on the mucosa of the small intestine.
- λ The most important congenital anomaly of the small intestine.
- λ Embryogenic remnants of vitello-intestinal duct .
- λ Role of (2 feet , 2 inches and 2%):
 - ▶ 2 feet from the ileocecal junction , 2 inches in length ,present in 2% of the population and has 2:1 male: female predominance.
- λ It contains all the layers of the mucosa and sometimes It may contain ectopic tissue (gastric , pancreatic ... etc.).

Presentation :

- λ Most of the cases are discovered indecently (sometimes during the surgery) and it's very difficult to diagnose it even if it has complications or if it's asymptomatic .

The patient presents with:

- ☒ Acute inflammation (resembles acute appendicitis) .
- ☒ Perforation (because it may have something blocking the lumen and then intraluminal pressure increases) .
- ☒ Bleeding (Because of presence of gastric tissue [they may form ulceration]) .
- ☒ Fistula .
- ☒ Intussusceptions (it may have part inside the lumen of the intestine and with peristalsis it will bring the proximal intestine to intussuscepts to the distal intestine) .

Diagnosis :

- ☒ It occurs in young people
- ☒ Increase index of suspicion .
- ☒ Small bowel enema .
- ☒ Tec-99 scan .
- ☒ Laprotomy for peritonitis .



Intestinal Diseases

Wednesday, Nov 28, 2007 , Dr. M. Al-Akeely

Chron's Disease :

*It's very common in western coteries and very rare in our community ,**BUT** in the recent years there is an increase of incidence of this disease .*

Definition :

Nonspecific transmural inflammatory process of GIT of unknown etiology characterized by skip lesions .

REMEMBER :

λ Crohn's disease **can affect any part of the GIT** from the mouth to the anal canal **BUT** it's very common in the small intestine .
λ It's **Transmural** so, **ALL** the layers of the small intestine are affected .

What does non-specific mean? ☆

It means that the disease comes with unknown cause (we don't know if It's because viral bacterial infections ...etc).

Gross Pathology :

The affected segment is swollen , bright red with creeping mesentery into the bowel (*the mesentery is edematous and covers most of the intestine*) , mesenteric lymphadenopathy (because of inflammation) and under the microscope there's mucosal ulceration separated by normal mucosa (**cobble stone appearance**) . Internal or external fistulation maybe present .

Presentation :

- ☒ Any age(20-40 is common) .
- ☒ Abdominal pain .
- ☒ Diarrhea and vomiting .
- ☒ Palpable in RIF (right iliac fossa) .
- ☒ Acute appendicitis like manifestation .
- ☒ Intestinal obstruction (*if the inflammation is severe , the edema will lead to the obstruction*) .
- ☒ Fistula formation .
- ☒ Malabsorption .
- ☒ Anemia (malabsorption symptom) .



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Investigations:

λ *The presentation of the disease is non-specific BUT the high index of suspicion is very important.*
λ *Most of the cases in our country are discovered incidentally.*

- ⌘ Haemoglobin (low) .
- ⌘ Occult blood in stool .
- ⌘ C-reactive & acute phase protein .
- ⌘ **Small bowel enema** (*fistula , stricture and cobble stone appearance*) . ☆
- ⌘ Tec 99 labelled leucocytes (*concentrate in the inflamed area*) .
- ⌘ Colonoscopy .

Complications :

Early : They're mentioned above (presentation) .

Late :

- ⌘ Renal stones (*oxalate*) .
- ⌘ Gall stones .
- ⌘ Sclerosing cholangitis , uveitis , sarcoidosis .

Treatment :

Is primarily medical (*Cortisone*) but surgery may be required for complications .

Intussusception :

Definition :

Prolapse of a portion of bowel (*intussusceptum*) into another (*intussuscepiens*) .

- ⌘ ileoileal , ileocolic (ileocecal) or colocolic .
- ▶ Ileocecal Intussusception is the commonest (*the terminal ileum invaginates into the cecum*) .

Etiology :

- ⌘ 95 % unknown specially in children & young adults .
- ⌘ Rarely it's due to tumors of intestine (*usually benign*) .



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Presentations :

- ☒ Abdominal pain
- ☒ vomiting
- ☒ pallor
- ☒ bleeding per rectum (PR) ,
- ☒ examination may reveal palpable mass specially in 3-12 months .

Complications :

The prolapsing part will block the blood supply and lead to ischemia and gangrene and the edema will lead to obstruction .

Treatment :

- ☒ Conservative in children if no strangulation (hydrostatic barium enema) .
- ☒ Resection & anastomosis in strangulated disease .
- ☒ Surgery is usually required in adults .

Tumors of Small Intestine :

λ **They are very rare .**

Benign :

- ☒ Adenoma(polyps) , lipoma , leiomyoma and hamartoma .

Malignant :

- ☒ The most common : Adenocarcinoma , lymphoma and carcinoid .
- ☒ Leiomyosarcoma .
- ☒ Secondary(more common than the primary) deposits from local adjacent tumors of bladder , uterus and ovary .

Clinical Features :

- ☒ Bleeding .
- ☒ Obstruction .
- ☒ Volvulus (*a loop of the bowel whose nose has twisted on itself*).

Acute Appendicitis :

- λ The commonest abdominal surgery .
- λ It's commonly due to obstruction of the lumen .



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Clinical Features :

- ☒ Upper abdominal pain , vomiting , diarrhea , (*frequent*) fever , leucocytosis , Tender RIF , rebound tenderness★ , guarding diminished bowel sounds with leucocytosis .
- ☒ Sometimes : dysuria and loss of motion (*depending on the affected area*) .

Initially when the pain is in the upper abdomen (retroperitoneum) it's poorly localized (because it's visceral) but when it shifted to the RIF it becomes well localized (because it's somatic [the parietal peritoneum is inflamed]).

Differential Diagnosis : ★

- ☒ Acute cholecystitis (*the gallbladder is distended → extends to the RIF*) .
- ☒ Crohn's disease .
- ☒ Acute pancreatitis .
- ☒ Meckel's diverticulum .
- ☒ Mesenteric adenitis (*young patients*) .
- ☒ Ureteric colic (*ureter stones*) .
- ☒ Renal colic (*pain in the groin and associated with dysuria*) .
- ☒ Gastroenteritis (*associated with excessive vomiting and diarrhea and they start before the pain*) .
- ☒ Perforated peptic ulcer .
- ☒ Ruptured ectopic pregnancy .
- ☒ Ovarian pathology .

Acute cholecystitis pain is related to fatty food intake , so taking history is useful .

Though the pancreas is a retroperitoneum organ and the pain is in the epigastric region and radiating to the back but the exudates will be trapped in the RIF and cause pain .

It's usually suspected when the patient mentions that he has eaten some contaminated food .

Acute appendicitis in females is the most challenging diagnosis because we are facing some cases of females who have a symptoms similar to acute appendicitis but after the investigations we find it's ruptured ectopic pregnancy . So, gynecological history & examination & the status of the female (Pregnant or menstruating) are important because ruptured ovarian cyst may cause the same symptoms .

Pregnancy test is important In any female has a symptoms similar to acute appendicitis (even if she's not married) .

Women who has ruptured ectopic pregnancy has a low HB .



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Complications :

- ☒ Perforation .
- ☒ Appendicular mass .
- ☒ Appendicular abscess.
- ☒ Intestinal obstruction.
- ☒ Portal pyemia .
- ☒ The risk of generalized perforation is high in Children & elderly because
 - ▶ In children the omentum is small and doesn't cover the appendix and it ruptures early .
 - ▶ In elderly the omentum is shrunken and doesn't cover the appendix .

Mass ,abscess and peritonitis :

Mass : it's not an actual mass but it's formed by the surrounding intestine and the omentum wrapping the inflamed appendix .

Abscess : When the appendix perforates **after** it's wrapped .

Peritonitis : When the appendix perforates **before** it's wrapped .

Treatment :

Surgery .

Diseases of The Colon :

λ *Very common , most of them are medical*

- ☒ Diverticular Disease
- ☒ Angiodysplasia .
- ☒ Ulcerative colitis .
- ☒ Dysentery .
- ☒ Chron's disease .
- ☒ Tumors .

Tumors :

Benign :

Adenoma (polyps) , lipoma , neurofibroma .

Malignant :

Adenocarcinoma , lymphoma , carcinoid , secondary tumors from adjacent structures .



Adenocarcinoma of The Colon :

λ *The most common tumor of the large intestine.*

Presentation :

- ☒ Bleeding per rectum (*most common*) . (Above 40 years)
 - λ It's caused by hemorrhoids which's venous dilation .
- ☒ Tennesmus (*feeling of defecation*)[in rectum carcinoma] .
- ☒ Lower Back pain .
- ☒ Anemia .
- ☒ Loss of weight and appetite .
- ☒ Obstruction .

Pathology :

- ☒ papilliferum or cauliflower in the proximal colon (**right** sided colonic adenocarcinoma).
They are not presenting with obstruction because the right colon is wide
- ☒ Malignant ulcer (rectal).
- ☒ Annular in the distal colon (**left** sided colonic adenocarcinoma).

The left colon is smaller in diameter than the right .

Contents :

right : liquid

Left : solid

Spread :

- ☒ Local intestine , bladder , ureter , ovary and uterus .
- ☒ Distant metastasis : liver and lung .

Remember the 4 ways of carcinoma spread :
Hematogenous , lymphatic , direct invasion and transcoelmic (through the body cavities) .

Staging: ☒

λ **Dukes' system**

- ☒ A - Tumor confined to the intestinal wall .
- ☒ B - Tumor invading through the intestinal wall .
- ☒ C - With lymph node(s) involvement .
- ☒ D - With distant metastasis .

Investigations :

- ☒ Blood.
- ☒ Colonoscopy.
- ☒ US
- ☒ and CT scan.
- ☒ Biopsy.



Treatment :

λ The aim of treatment in any carcinoma is to **resect** the tumor .

λ Types of resection :

- ▶ Curative : upon removing(resecting) the segment containing the tumor , the patient is cured .(**no metastasis**)
- ▶ Palliative resection : (When the tumor is irresectable). If the cancer has spread and cannot be removed at the time of diagnosis, the patient may be offered various palliative procedures.
 - ♣ E.g. When the patient has a large bowel obstruction and secondary tumor in the liver .

Types of colostomy : ☒

It's a surgical creation of an opening between the colon and the body surface.

Types :

- ☒ loop colostomy .
- ☒ end colostomy .
- ☒ double barrel colostomy.

Complications :

ischemia, prolapse, hernia, stenosis and retraction.

Volvulus :

Definition :

Twisting of a loop of bowel around mesenteric pedicle . Commonly affects sigmoid colon . small intestine , cecum , but stomach & gallbladder are rarely affected .

Predisposing Factors :

- ☒ Redundant mesentery .
- ☒ Loaded loop of intestine (e.g. constipation) .
- ☒ Narrow mesenteric pedicle.
- ☒ Fixed intestine at one point with adhesion .

What does pedicle mean ?

Segment .(Every part of the colon has it's own mesentery (pedicle) which carries the blood vessels).

Sigmoid Colon Volvulus :

Features :

- ☒ Acute sudden lower abdominal pain . ☆
- ☒ Distension .(X-ray shows distension in left side).
- ☒ Signs of ischemia .



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Treatment :

- ☒ Depends on the complications : In simple cases or non - strangulated cases , colonoscopy & deflation is the treatment .
- ☒ When gangrene is suspected , surgery has to be done with resection and colostomy

Mechanical VS. Paralytic :

Mechanical (dynamic) :

Blockage (obstruction) of the normal flow of intestinal contents(peristalsis) .

Paralytic :

Failure of the normal peristalsis .

Classification :

3 methods :

- ☒ Speed of onset : acute vs. chronic . OR :
- ☒ Site : High vs. low (small intestine vs. large intestine) . OR :
- ☒ Nature : simple vs. strangulated .

Etiology :

- ☒ Causes in the lumen. E.g. large amount of worms (ascaris) or foreign body .
- ☒ Causes in the wall .E.g. tumors or strictures .
- ☒ Causes outside the wall , (**most common**) E.g. compression by adhesion bands .

Pathology :

- λ In simple obstruction , the distal bowel is collapsed & the proximal one is dilated with fluid and gas .
- λ In strangulated obstruction , the mucosal barrier is lost with transmigration of bacteria and toxins into the peritoneal cavity with ultimate In strangulated obstruction, the mucosal barrier is lost with transmigration of bacteria and toxins into the peritoneal cavity with ultimate perforation at the ischemic area.

1. The differential diagnosis of acute appendicitis includes all the following , EXCEPT :

- A. Ruptured right ectopic pregnancy .
- B. Right ureteral colic .
- C. Crohn's disease .
- D. Chaga's disease .
- E. Acute cholecystitis .

