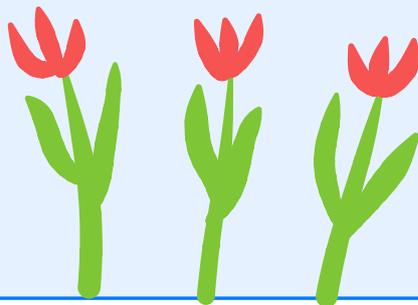


تبييض مخاطرة

# Large intestine

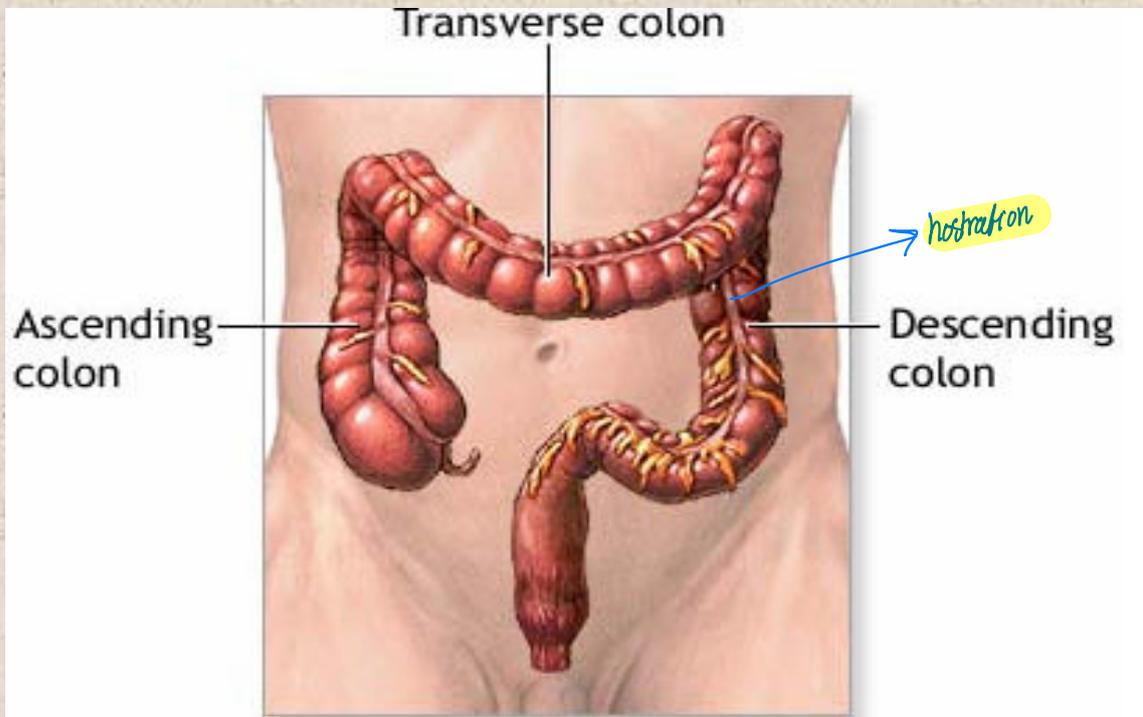
د. سعد العزاوي

Done by :



# LARGE INTESTINE

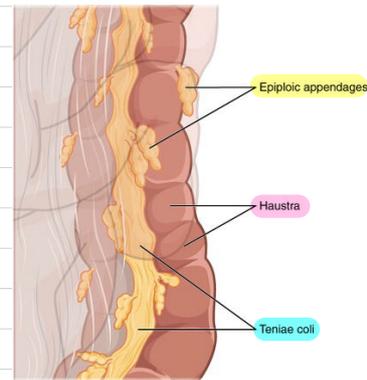
## surgical anatomy



\* found in large bowel, not found in small intestine :-

- ① **Appendices epiploicae** → liable for torsion  
→ thicker & larger in females

\* Non-specific acute abdominal pain it accounts about 30% of the acute abdominal pain in the accidents & emergencies departments (not surgical)



- ② **Haustra**: Just in large bowel

- ③ **Teniae coli**: Condensed longitudinal muscle fiber (تنقي لياقو، sigmoid)

colon is weak, لياقو يفتق ←  
colon لياقو يفتق ← diverticulosis coli ←

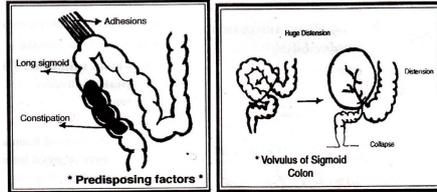
\* There is no diverticulosis in the rectum

retroperitoneal  
 \* Part of large bowel is extra-peritoneal & Part of large bowel is totally intra-peritoneal  
 (covered posterior & lateral) ↔ sigmoid colon, Transverse Colon (covered anterior) & Partly lateral) ascending & descending Colon

في اليمين ← اذا كان اليمين في  
 و يمينه بسيف ← اذا كان Retroperitoneal

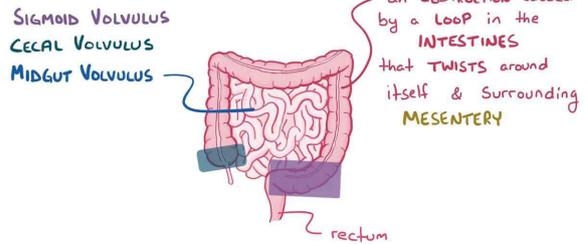
↳ No signs & symptoms

↔ متاعف (2-3 days) ← لا يوجد  
 inflammation & septicemia



↳ liable for torsion (Volvulus)

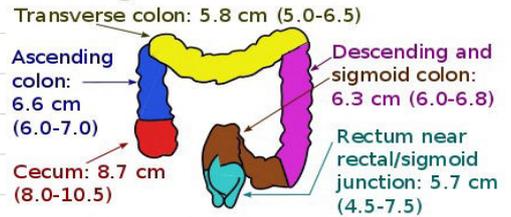
**Volvulus**



④ Caliber of Colon:

Rt side is wider than Lt side (Tumors باليمين)  
 Rt side is very difficult to detect but  
 in Lt side → narrower → obstruction ←

**Large intestinal diameters**



**Clinical anatomy**

\* if there is large intestinal obstruction, large or small bowel distended loop  
 with haustra  
 obstruction in large bowel



# Diet and large bowel diseases

## \* Diet quality:

- Fibre diet
- Antioxident rich diet
- Dietary lectins
- Carcinogens in diet

\* bad diet:  
more lactins  
(gluco-Protein)  
↳ carbohydrate + protein

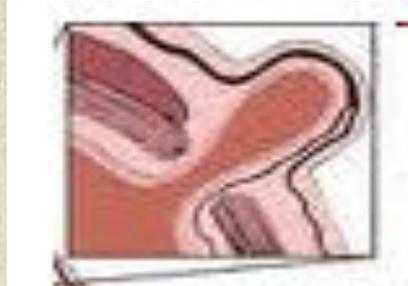
\* good diet:  
more fibers, more anti-oxidant



## \* frequency of defecation & contact time



# DIVERTICULOSIS of THE COLON



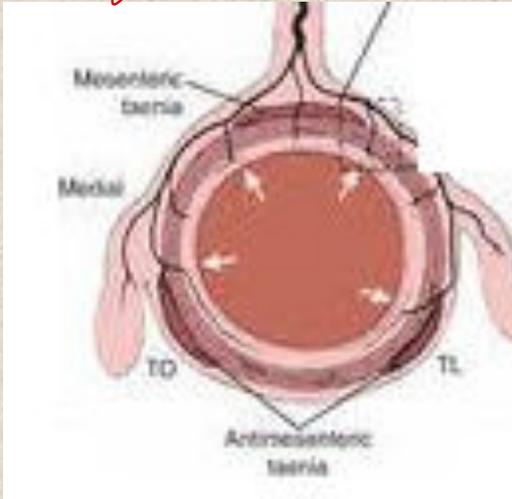
Is a sac like protrusion in the colonic wall,  
develops as a result of herniation of mucosa and sub mucosa  
through a point of weakness in the muscular wall.

# DIVERTICULOSIS of THE COLON

2% ←  
 2 inches Long ←  
 2 feet from ileocecal valve ←  
 2 types of epithelium ←

00 Pstb  
 4 2s ←

in terminal ileum &  
 ileocecal valve  
 anteromesentric (مذراع)



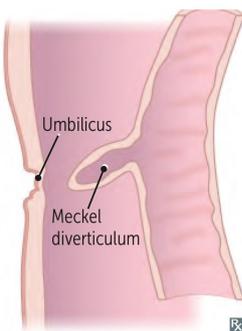
**Colonic diverticulum**



Fig. 3. Hernia sac content: a large amount of small bowel with Meckel's diverticulum.

**Meckle diverticulum**

## Meckel diverticulum



**True diverticulum.** Persistence of the vitelline (omphalomesenteric) duct. May contain ectopic acid-secreting gastric mucosa and/or pancreatic tissue. Most common congenital anomaly of GI tract. Can cause hematochezia/melena (less common), RLQ pain, intussusception, volvulus, or obstruction near terminal ileum.

Diagnosis:  $^{99m}\text{Tc}$ -pertechnetate scan (also called Meckel scan) for uptake by heterotopic gastric mucosa.

The rule of 2's:

- 2 times as likely in males.
- 2 inches long.
- 2 feet from the ileocecal valve.
- 2% of population.
- Commonly presents in first 2 years of life.
- May have 2 types of epithelia (gastric/pancreatic).

# DIVERTICULAR DISEASE

1. Typically acquired disease ,rarely may be  $<1\%$  congenital.

*<40 very rare >40*  
2.increase with age → *ceciñ in qid, 9'8 (thin wall)*

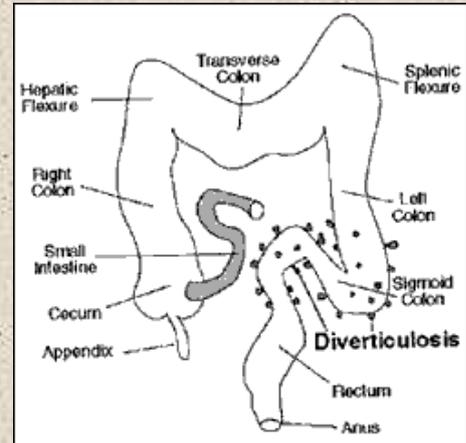
5% befor age of 50 y  
30%after age of 50y  
50 % over 70y  
66% over 85y

*\* ↑ intraluminal pressure  
\* hard feces*

3.common in left side  
sigmoid colon : 90%

4. M: F ratio equal

5. rare in the 3rd world , is related to the fibre diet



## ETIOLOGY

1. Precise etiology of this disease is unknown.

- High intraluminal pressure and a weak colonic wall
- The condition also may be caused by abnormal colonic motility

2.Genetic & enviromental factors may play a role

- defective muscular structure, defects in collagen consistency.

3. Predisposing factors:

a.obesity

b. dec. physical activity

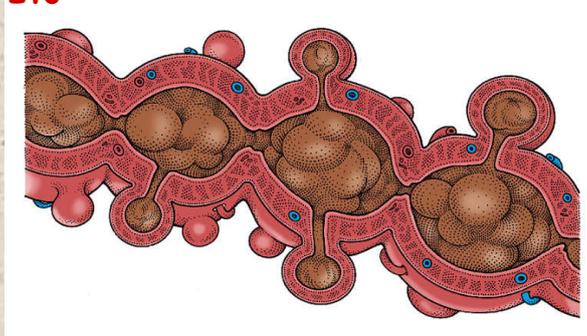
c. alcohol, coffee , cigaret smoking ,low fibre diet

> constipation is the main cause of increased pressure in the colon, making the muscles strain to move stool that is too hard.

Constipation : bowel try to push hard stool : hypertrophy of diverticulum : protrusion of sac Etc

↑ water ↓ absorb

↑ more hard



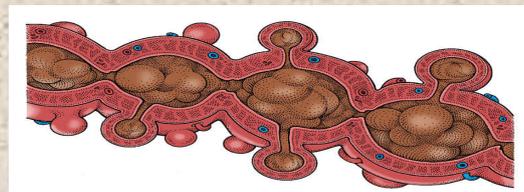
> The excess pressure caused by the straining makes the weak spots in the colon bulge out, forming diverticula

the rectum is never affected

## PATHOLOGY:

\* True diverticulum include all layers of intestine

1. It is a pseudo diverticulum
2. Usually found between mesenteric & anti mesenteric taenia
3. occurs at the weak sites in the circular m., mesen. vessels penetration.
4. Elevated I.L. pressure by tonic & rhythmic contractions result in segmentation “nonpropulsive contractions produce isolated segments”

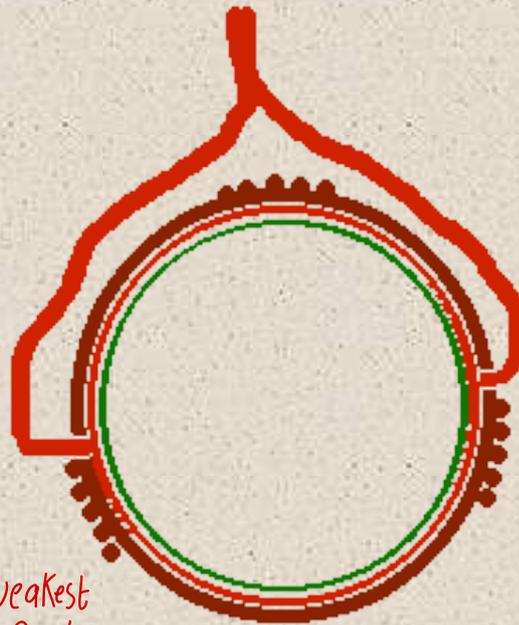


5. Thickening of long. & circular muscles can lead to narrowing of colonic lumen .

# Pathology

Early there is increasing colonic muscle spasm and incoordination → segmentation of colon → increase intraluminal colonic pressure

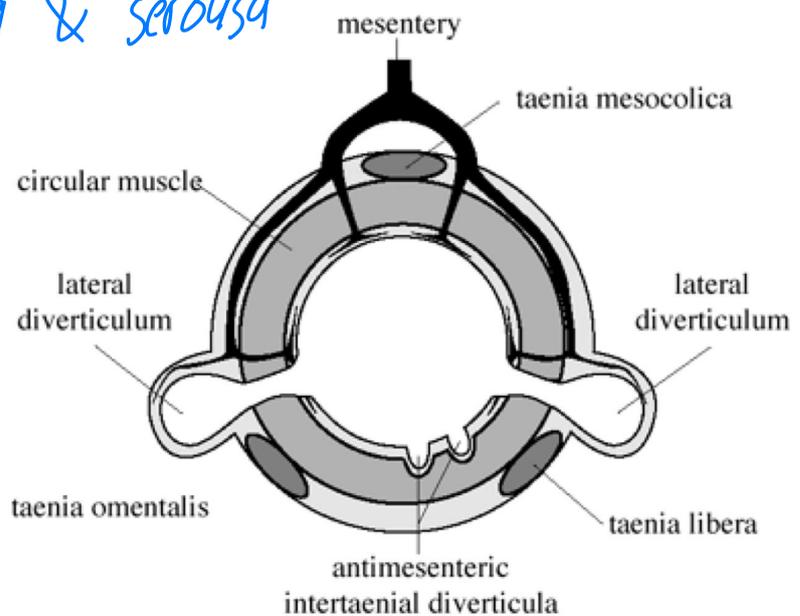
This disease represent pulsion diverticula of colonic mucosa through the circular muscle layer at the point of entry of the blood vessels between the taenia coli at the anti-mesenteric border

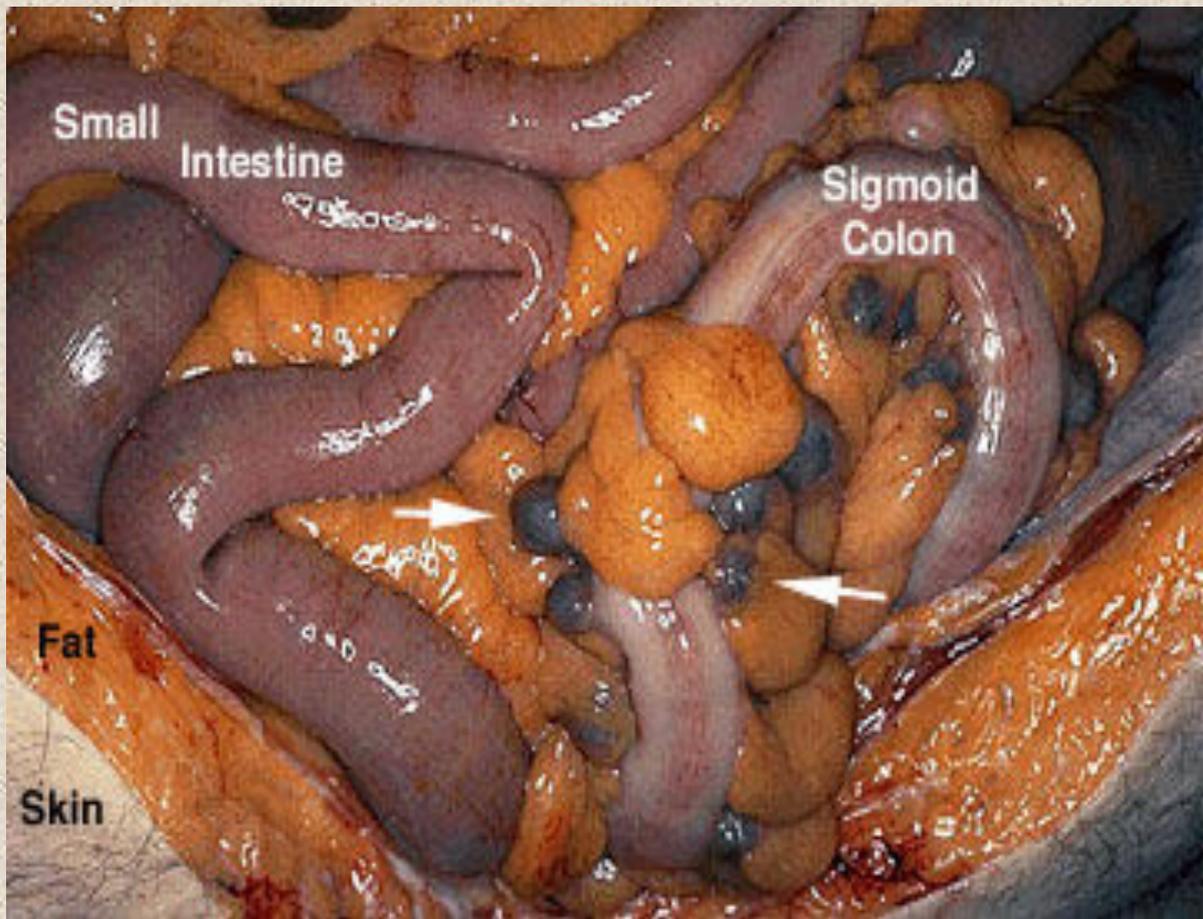


True diverticulum → layers ١١ دس الجان

Pseudo → just mucosa & serosa

**Pulsion diverticula between the taenia coli at the anti-mesenteric border.**





## TERMINOLOGIES

\* Diverticulosis : only diverticulum without signs and symptoms

\* Diverticular Disease : signs and symptoms موجودة

\* acute condition : التهاب (الاحيرة)

### *Diverticulosis:*

The presence of multiple diverticulae “generally implies to an absence of symptoms”

*accidentally* بكتشفونه

### *Diverticular disease:*

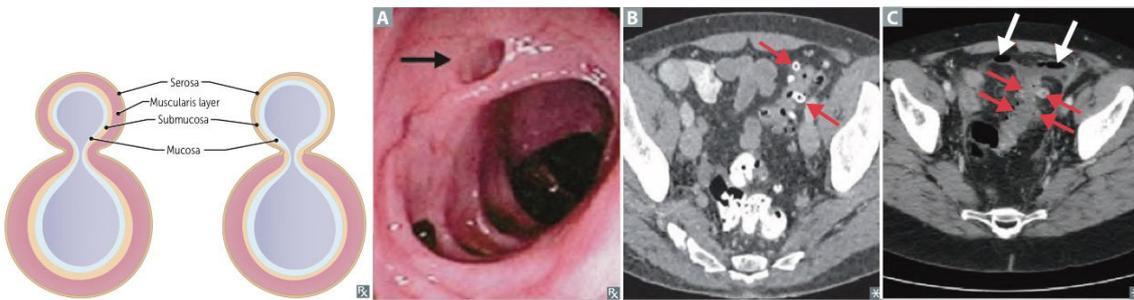
Any clinical features caused by diverticulae including complications

### *Diverticulitis:*

The presence of inflammatory process associated with diverticulae.

## Diverticula of the GI tract

<b>Diverticulum</b>	Blind pouch <b>A</b> protruding from the alimentary tract that communicates with the lumen of the gut. Most diverticula (esophagus, stomach, duodenum, colon) are acquired and are termed “false diverticula.”	“True” diverticulum—all gut wall layers outpouch (eg, Meckel). “False” diverticulum or pseudodiverticulum—only mucosa and submucosa outpouch. Occur especially where vasa recta perforate muscularis externa.
<b>Diverticulosis</b>	Many false diverticula of the colon <b>B</b> , commonly sigmoid. Common (in ~ 50% of people > 60 years). Caused by ↑ intraluminal pressure and focal weakness in colonic wall. Associated with obesity and diets low in fiber, high in total fat/red meat.	Often asymptomatic or associated with vague discomfort. Complications include diverticular bleeding (painless hematochezia), diverticulitis.
<b>Diverticulitis</b>	Inflammation of diverticula with wall thickening (red arrows in <b>C</b> ) classically causing LLQ pain, fever, leukocytosis. Treat with supportive care (uncomplicated) or antibiotics (complicated).	Complications: abscess, fistula (colovesical fistula → pneumaturia), obstruction (inflammatory stenosis), perforation (white arrows in <b>C</b> ) (→ peritonitis). Hematochezia is rare.



# CLINICAL FEATURES

## DIVERTICULOSIS

- 1. Usually asymptomatic**
- 2. Lower abdominal colicky pain & flatulence which disappear after defecation**

## Symptoms & signs of acute diverticulitis:

- a. Acute lt. Lower quadrant pain : severe & deep**
- b. Nausia & vomiting**
- c. Fever, chills**
- d. constipation, or alternating with bouts of diarrhoe**
- e. urinary symptoms: dys, freq. Urg.**
- f. Tenderness, guarding lt. lower quadrant**
- g. leucocytosis**
- h. Per rectal exam.: tender lt. side**

## DIAGNOSIS

- 1. Clinical features**
- 2. Radiology, Barium enema**
- 3. sigmoidoscopy, colonoscopy**
- 4. CT**
- 5. U/S**

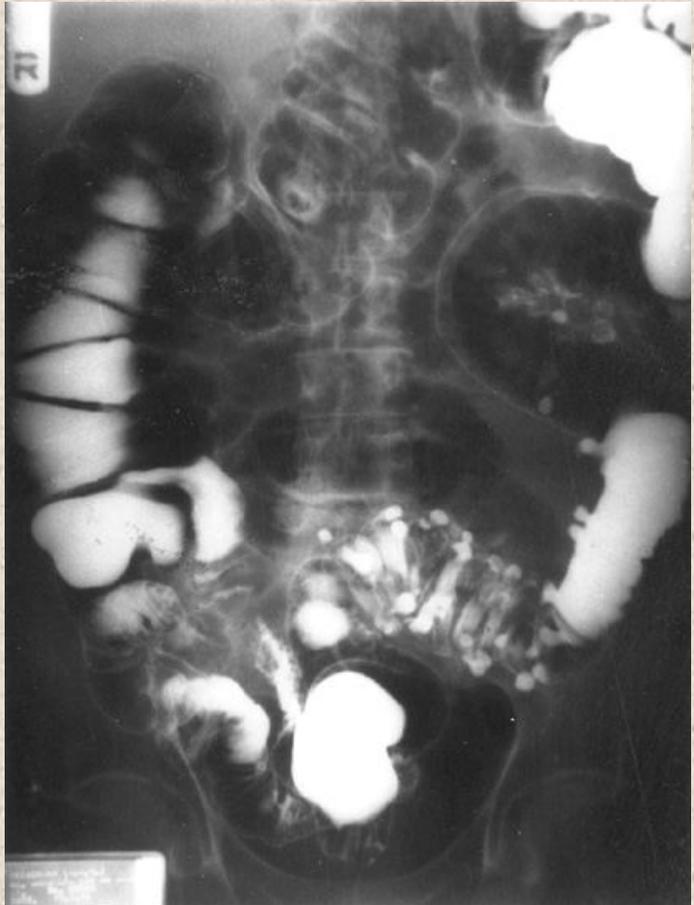
Radiology

double contrast  
barium enema

عشان نفوف  
gas + barium



saw tooth appearance in diverticular





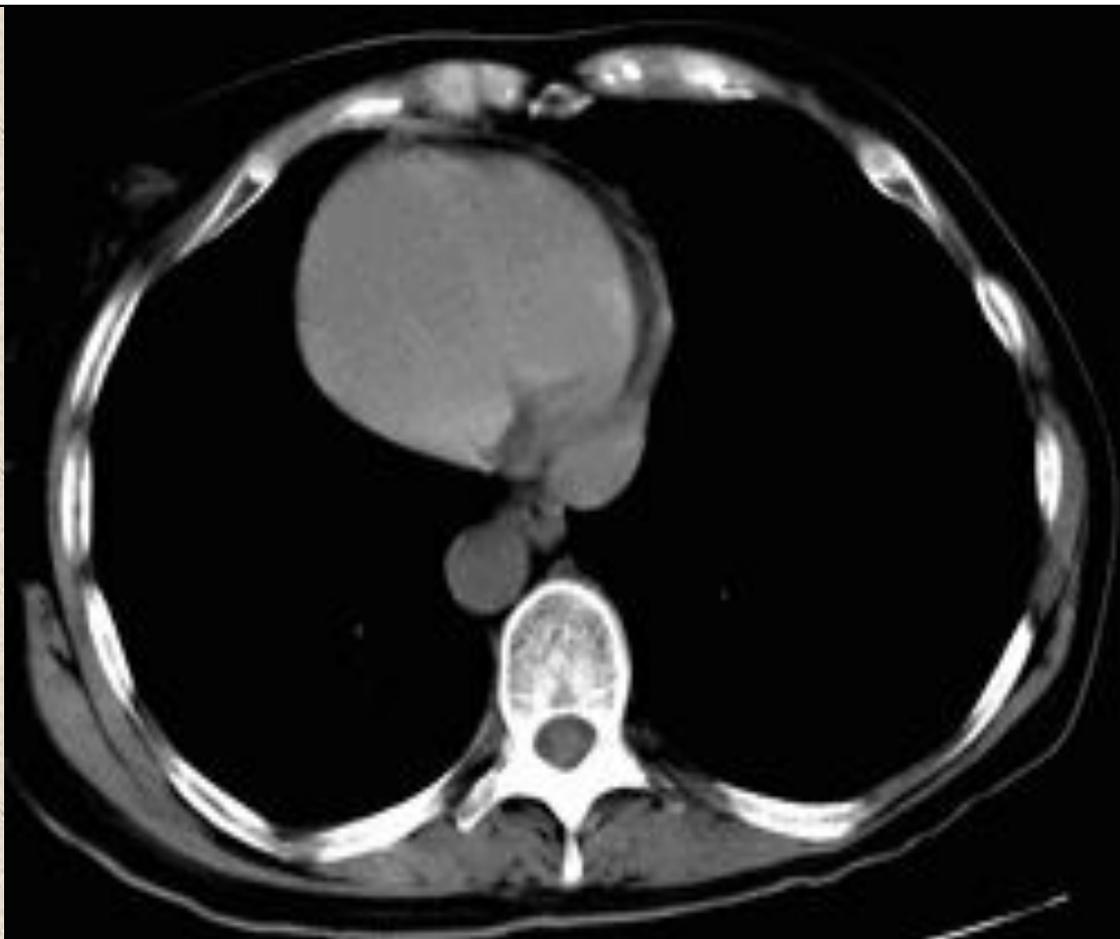
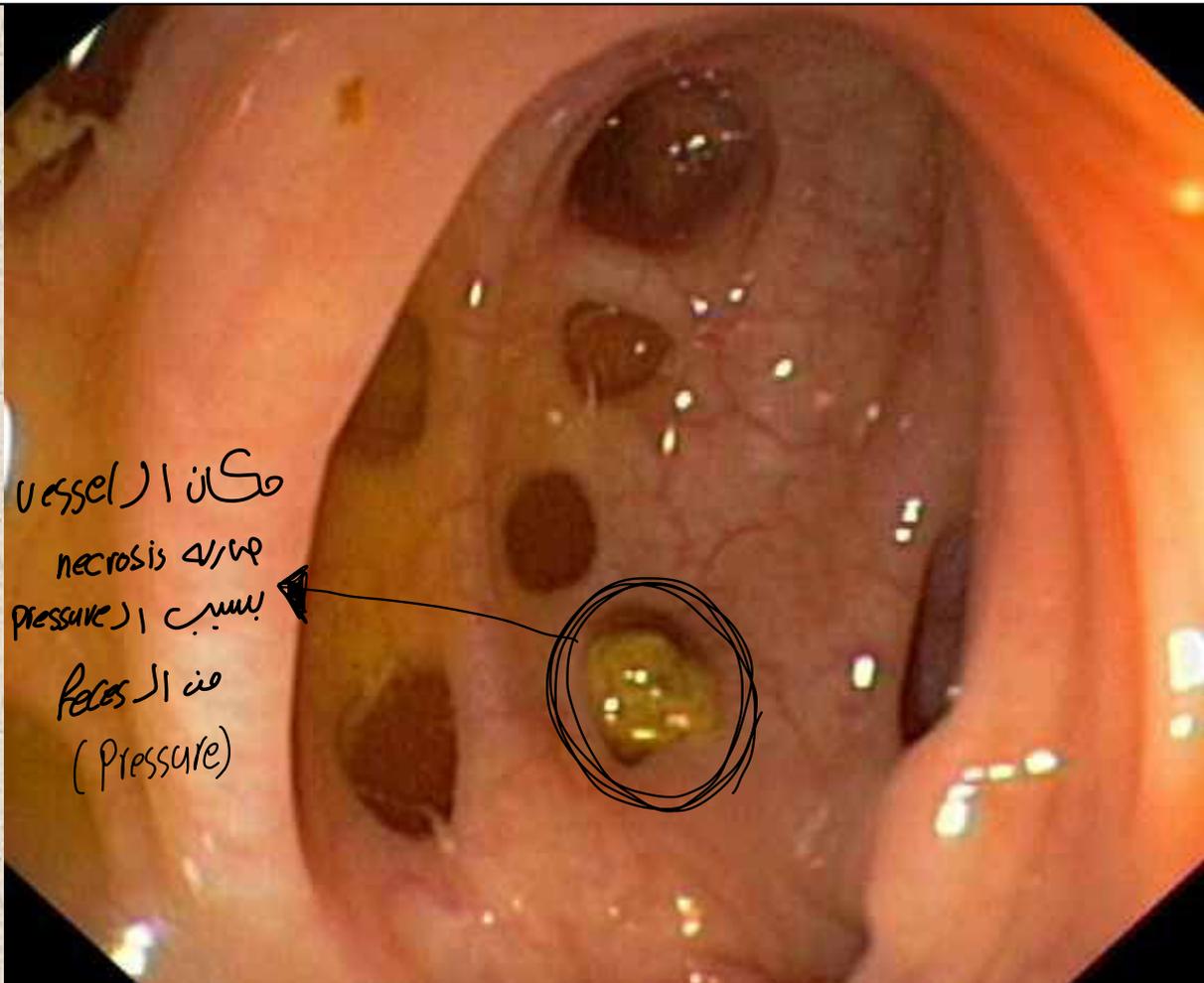
Colonoscopy

abnormal



Normal





# COMPLICATIONS

Complications detect by US & CT

## 1. Abscess

Stage I - Pericolic abscess

Stage II - Pelvic abscess

Stage III - Purulent peritonitis

Stage IV - Feculent peritonitis

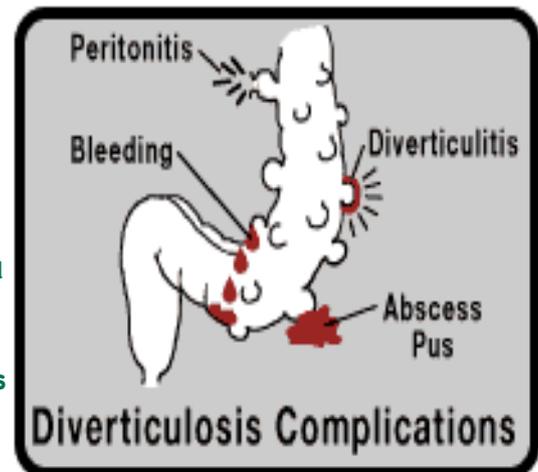
2. Bleeding erosion of blood vessels

3. fistula formation colo-intestinal, colo-vesical

## 4. Intestinal obstruction

Obstruction of the neck of diverticula → acute diverticulitis

→ perforation → localized or generalized peritonitis



# TREATMENT

DIVERTICULOSIS : Treatment of constipation, high fiber diet and antispasmodics

## 1. High residue diet :

it lowers I.L. pressure, reduce symptoms,  
& prevents complications.

2. Encourage physical activity, i.e walking

3. antispasmodic for pain.

4. antibiotics some times needed

# TREATMENT of DIVERTICULITIS:

It depends upon the severity of symptoms and clinical findings :

**a. Rest in bed**

Usually resolve by conservative treatment similar to appendicular mass

**b. liquid diet or Administer intravenous fluid as indicated.**

**c. insert a nasogastric tube if patient is vomiting or colonic obstruction is suspected**

**d. Treating up the infection & inflammation :**

**antibiotics cover gram +ve, gram-ve, & anaerobes**

pericolic abscess : Ultrasonic or

CT guided aspiration ( similar to appendicular abscess).

## Treatment of complications

1. perforation

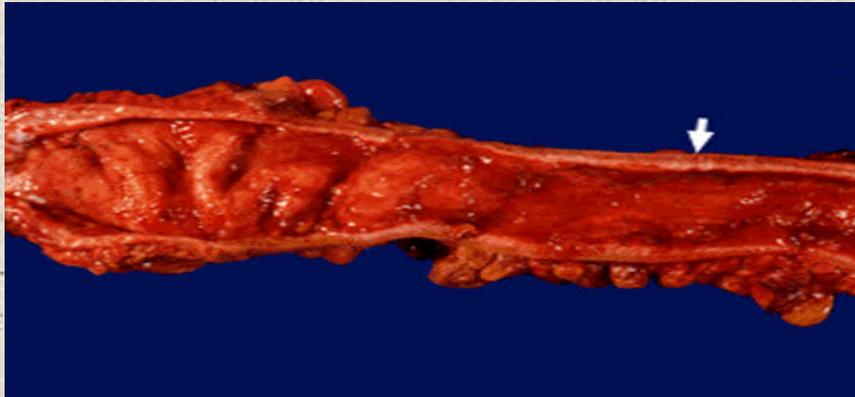
2. abscess Abscess Incision and drainage Not by Surgery

3. Bleeding

4. Fistula formation

5. Large bowel obstruction

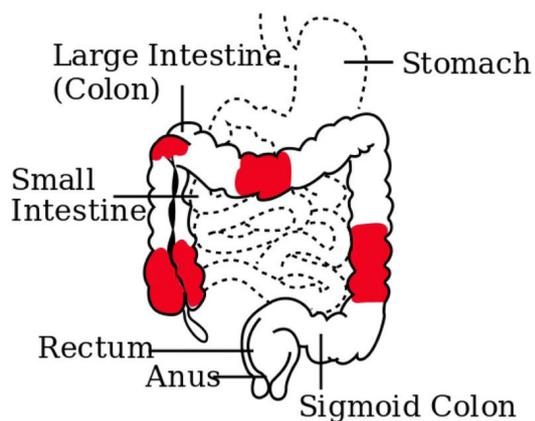
# ULCERATIVE COLITIS



a chronic disease characterized by diffuse mucosal inflammation of the colon and rectum

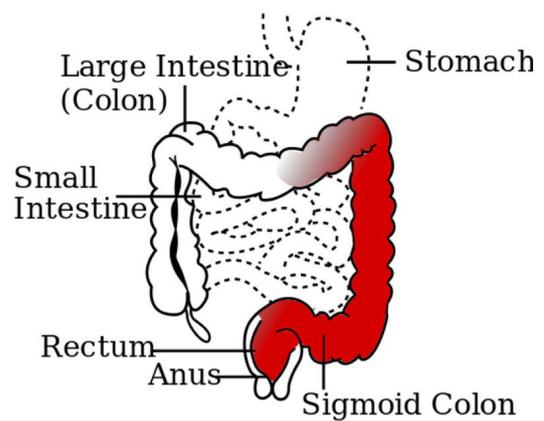
Anal canal never involve in ulcer :: different mucosa

inflammatory bowel disease → Ulcerative colitis  
→ Crohn's



Crohn's Disease

skip lesions



Colitis ulcerosa

diffuse (continuous)

# Epidemiology <sup>نازل</sup> (remission <sup>no symptoms</sup> & <sup>acute</sup> exacerbation)

1. chronic inflammatory disorder limited to the rectum and colon ,relapses & remission is a character of the disease.
2. The precise etiology of ulcerative colitis is not well understood , abnormal activation of the immune system in the intestines is suggested.
3. sex ratio: nearly equal with a female preponderance.
4. The onset of ulcerative colitis is most common between 15 and 40 years of age, with a second peak in incidence between 50 and 80 years .
5. Cigarette smokers have a 40 percent lower risk of developing ulcerative colitis than do nonsmokers;

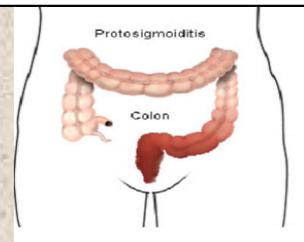
## Ulcerative Colitis and Smoking

- \* current smokers with ulcerative colitis tend to have fewer and less severe disease flare-ups.
- \* Researchers recently reported that smoking appears to alter the makeup of the various types of bacteria living in the intestinal tract
- \* Ulcerative colitis is an immune disease; it occurs when a person's immune system mistakenly attacks and destroys the tissues of the colon
- \* The relationships among intestinal microbes and the immune system are of particular relevance to inflammatory bowel disease.

## Why Might Smoking Have a Protective Effect on UC?

The key is probably the nicotine in cigarette smoke. According to Crohn's and Colitis UK, nicotine may suppress your immune system, decrease the inflammation of ulcerative colitis, and boost production of the mucus in the colon that acts as a protective barrier

# PATHOLOGY



1. The disease starts in the rectum in 90% of the cases
2. Diffuse inflammation of the mucosa, increase vascularity and congested mucosa with decrease ability to absorb water, lead to diarrhoe
3. Multiple Minute Ulcer "undermined ulcer" with numerous haemorrhagic spots the engorged vessels can give rise to bleeding  
*↪ another? Tuberculosis*
4. The ulcerated areas are soon covered by granulation tissue, later end with scarring & shortening.

*healing → granulation tissue → fibrous tissue → Narrowing (M.C)*

## Cont. pathology

**7. pseudopolyp formation found in about 15-20% of cases**

Pseudopolyps usually present between the ulcers

**8. Microscopic changes include: inflammation of the crypts of Lieberkuhn and crypt abscesses.**

**9. some patients due to an incompetent ileocecal valve , about 30 cm of the terminal ileum is affected.**

Never affect ileum

It affects mucosa only

Mucosal affection varies from granularity to extensive ulceration

## pathology

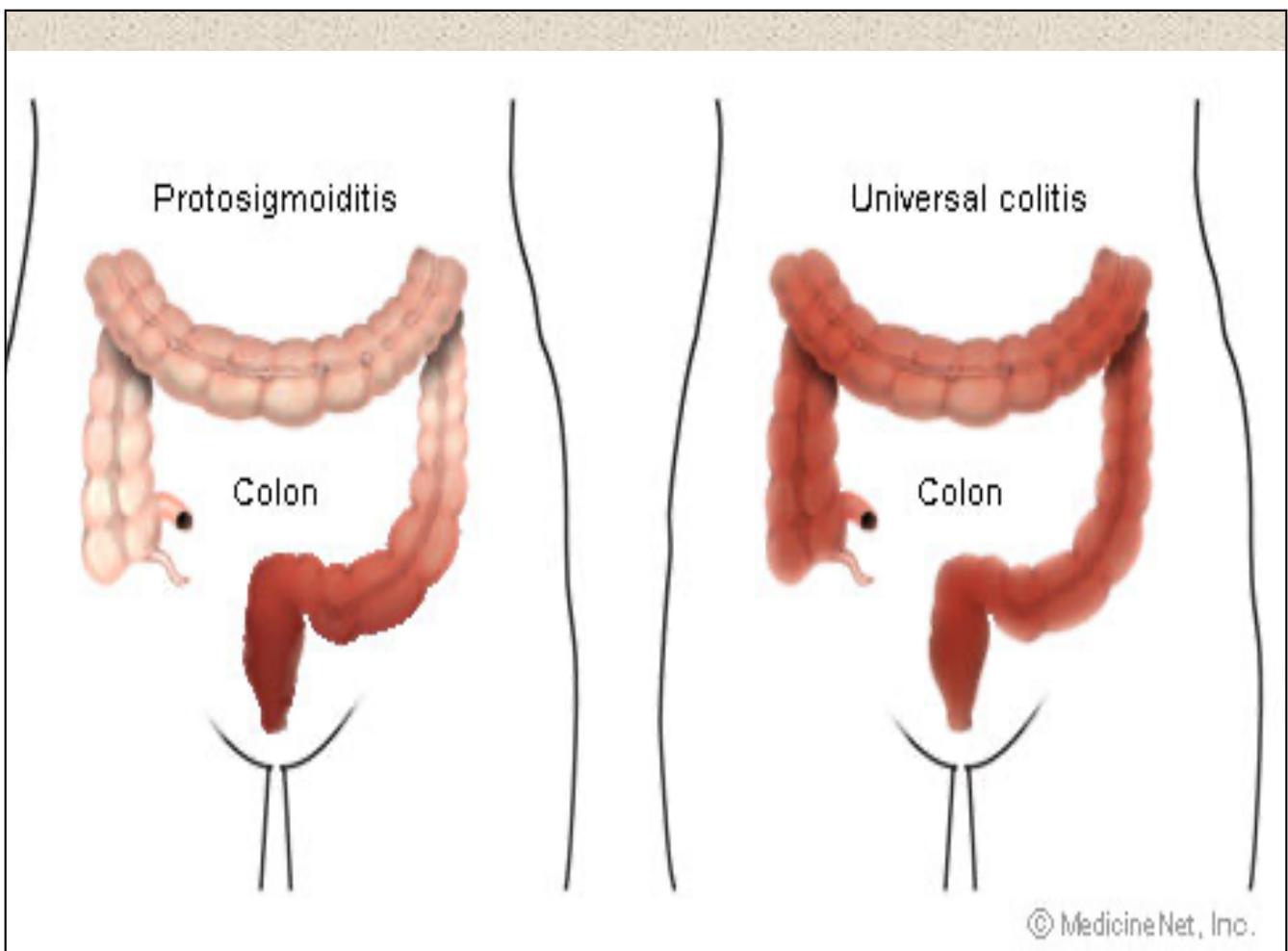


Pseudo polyops

# EXTENT OF THE DISEASE

The extent of colonic involvement can often, but not always, be predicted by the degree of symptomatology exhibited by the patient

1. **Proctitis** : Involvement limited to the rectum
2. **Proctosigmoiditis**: Involvement of the rectosigmoid colon
3. **Left-sided colitis**: Involvement of the descending colon, which runs along the patient's left side, up to the splenic flexure and the beginning of the transverse colon
4. **Pancolitis** : Involvement of the entire colon, extending from the rectum to the cecum,



# CLINICAL FEATURES

1. The hallmark symptoms of ulcerative colitis are :

- intermittent **bloody diarrhea** *symptom not*
- rectal urgency
- **tenesmus** *Most important*

2. Abdominal pain, cramping, subside after bowel movement

3. WT loss

4. Extra intestinal manifestation particularly arthritis, the commonest

Ankylosing spondylitis

skin lesions

Primary sclerosing cholangitis

# SIGNS

Palor

Dehydration

ematiation

Mild fever

Tachycardia

Abdominal tenderness

Blood on digital rectal examination

## EVALUATION OF SEVERITY

### Clinical scale:

MILD : <4 motions /day ,no systemic signs

MODERATE : >4 motions /day ,no systemic signs

SEVER CASE : >4 motions /day +systemic signs  
:fever,tachycardia,WT loss,Hypoalbunaemia

out  
Patient  
treatment

Need  
admission ✓

## Endoscopic scale

a score of 0 is given for normal mucosa or inactive UC.

a score of 1 is given for evidence of mild friability, reduced vascular pattern, and mucosal erythema.

A score of 2 is indicative of moderate disease with friability, erosions, complete loss of vascular pattern, and significant erythema,

a score of 3 indicates ulceration and spontaneous bleeding

# Crohns dis. & ulcerative colitis

## Similarities :

1. Both are chronic inflammatory diseases.
2. Both are of unknown etiology
3. Both have no cure following medical treatment
4. Both have extra intestinal manifestations
5. Presence of diarrhoe in both cases.

## Non similarities:

1. Anatomical site in G.I. tract
2. Anatomical site in bowel wall.
3. Presence of skipped lesion.
4. Mucosal appearance
5. Surgical cure

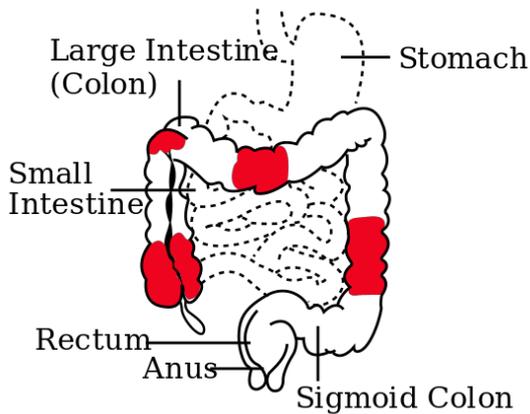
## Differential diagnosis of ulcerative colitis:

includes any condition that produces chronic, intermittent diarrhea :

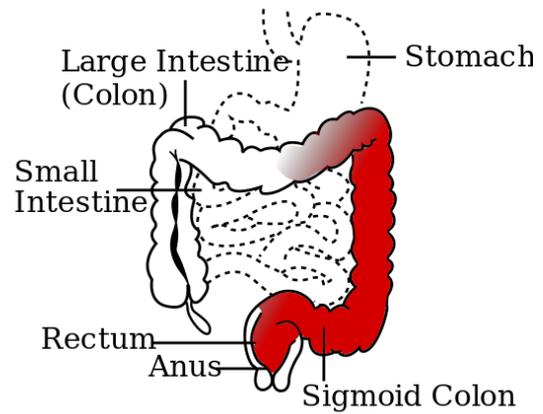
1. Crohn's disease,
2. ischemic colitis,
3. infectious colitis,
4. irritable bowel syndrome (IBS),
5. pseudomembranous colitis

### Inflammatory Bowel Disease

\* This term is usually used to denote **ulcerative colitis** and **Crohn's disease** .However bowel inflammation can be caused also by Bilharzial colitis , amoebic colitis , ileocaecal T.B and typhoid enteritis .



Crohn's Disease



Colitis ulcerosa

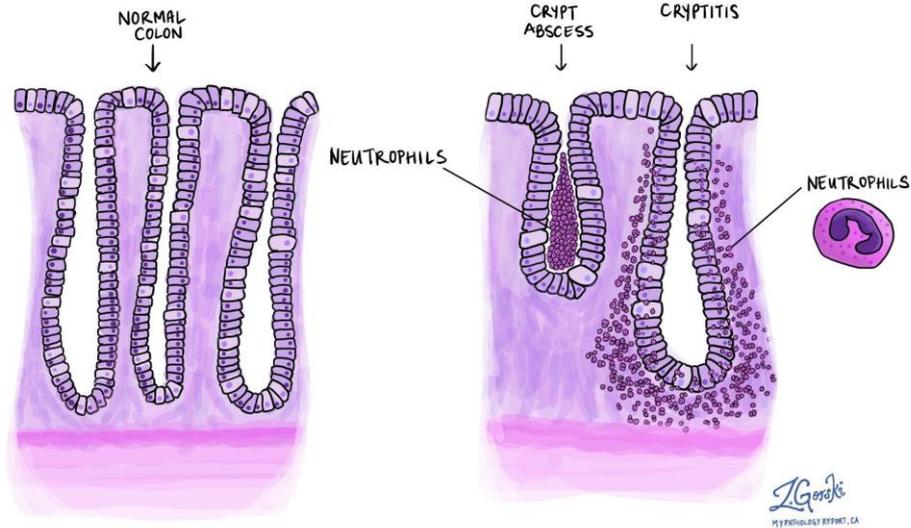
	<b>Crohn's Disease</b>	<b>Ulcerative Colitis</b>
<b>Indidence</b>	<ul style="list-style-type: none"> <li>▪ <b>Equal</b> in male &amp; female</li> <li>▪ Commonly occur 10-30 years.</li> </ul>	<ul style="list-style-type: none"> <li>▪ More in <b>females</b> .</li> <li>▪ Commonly occur 20-40 years.</li> </ul>
<b>Aetiology</b>	<ul style="list-style-type: none"> <li>▪ Unknown but <b>immunological</b> , genetic or environmental factors are possible causes .</li> </ul>	
<b>Pathology</b>	<ul style="list-style-type: none"> <li>▪ It can affect any part of GIT from <b>mouth to anus</b> .</li> <li>▪ The <b>commonest</b> site is terminal <b>ileum</b> followed by proximal colon and anal canal with <b>rectal sparing</b> .</li> </ul>	<ul style="list-style-type: none"> <li>▪ Usually start above dentate line and extend upward for variable distance to affect <b>rectum</b> only(proctitis) or <b>left colon</b> or <b>whole colon</b> (pancolitis) .</li> <li>▪ <b>Never</b> affect <b>ileum</b> .</li> </ul>
	<ul style="list-style-type: none"> <li>▪ It affects <b>all layers</b> from</li> </ul>	<ul style="list-style-type: none"> <li>▪ It affects <b>mucosa</b> only .</li> </ul>

	<p>mucosa to serosa ,  <b>surrounding</b> structures &amp;  <b>mesentery</b> which contain  enlarged lymph nodes .</p>	<ul style="list-style-type: none"> <li>▪ Mucosal affection varies from <b>granularity</b> to extensive <b>ulceration</b></li> </ul>
	<ul style="list-style-type: none"> <li>▪ It is Characterised by <b>skip areas</b> ( normal healthy gut between the diseased areas )</li> </ul>	<ul style="list-style-type: none"> <li>▪ It is <b>continuous</b> disease with sharp transition between diseased &amp; healthy area without any skip area .</li> </ul>
	<ul style="list-style-type: none"> <li>▪ It is characterized by <b>granuloma</b> formation ( collection of inflammatory cells ) followed by severe fibrosis , marked <b>thickening &amp; narrowing</b> of the affected segment .</li> <li>▪ In <b>longstanding</b> cases ,multiple fissures occur with mucosal oedema → <b>cobble stone</b> appearance.</li> </ul>	<ul style="list-style-type: none"> <li>▪ The condition begins with multiple <b>crypt abscesses</b> surrounded by <b>inflammation</b> .</li> <li>▪ These abscesses fuse to form <b>superficial ulcers</b> .</li> <li>▪ <b>Pseudopolyps</b> usually present between the ulcers .</li> <li>▪ <b>Minimal fibrosis</b> without thickening of the wall .</li> </ul>
<b>Complications</b>	<ul style="list-style-type: none"> <li>▪ <b>Intestinal :</b></li> <li>1) Stricture → I.O</li> <li>2) Abscess and fistula to bowel loops , bladder , vagina or skin .</li> <li>3) Anal fissure , abscess</li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Intestinal :</b></li> <li>1) Toxic <b>megacolon</b> (5%) due to atony of colon may be <b>fatal</b> .</li> <li>2) <b>Haemorrhage , shock &amp; anaemia</b> .</li> </ul>

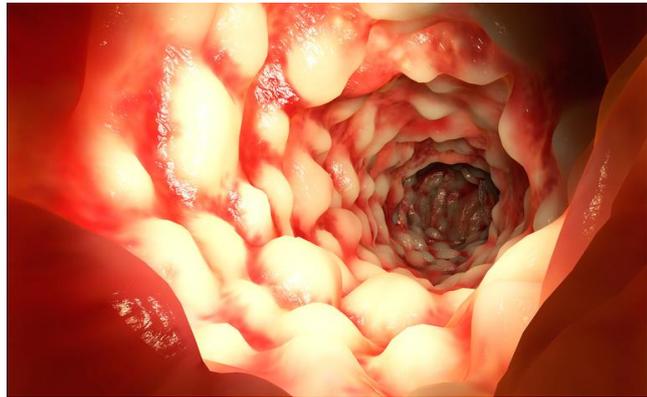
	<p>and fistula .</p> <p>4) Malabsorption .</p> <p>5) <b>G.B stones</b> due to lack of absorption of bile salts.</p>	<p>3) <b>Colon cancer</b> especially in pancolitis for more than 10 years , often multicentric .</p>		
	<p>▪ <b>Extra-intestinal</b> :Uveitis , arthritis , cholangitis , liver cirrhosis , skin lesions , pyoderma gangrenosum and erythema nodosum.</p>			
<p><b>Clinical picture</b></p>	<p>▪ There remissions &amp; exacerbations .</p> <table border="1" data-bbox="416 734 1417 2009"> <tr> <td data-bbox="416 734 919 2009"> <p>▪ <b>Gradual</b> onset .</p> <p>▪ It starts by <b>diarrhoea</b>.</p> <p>▪ <b>In ileitis only</b> there is no passage of mucus , pus or bleeding per rectum and no tenesmus.</p> <p>▪ Colicky <b>pain</b> &amp; tenderness in the right iliac fossa simulating acute appendicitis .</p> <p>▪ <b>In long standing cases:</b> Indurated tender <b>mass</b> in the right iliac fossa or <b>I.O may occurs</b>.</p> <p>▪ <b>General manifestations</b> are similar to ulcerative colitis.</p> <p>▪ <b>Crohn's colitis</b> gives similar manifestation as</p> </td> <td data-bbox="919 734 1417 2009"> <p>▪ <b>Acute</b> onset .</p> <p>▪ It starts by severe watery <b>diarrhoea</b>( up to 30 times/day) with passage of <b>mucus , pus and bleeding per rectum</b> are the cardinal feature .</p> <p>▪ <b>Tenesmus</b> is severe .</p> <p>▪ Colicky <b>pain &amp; tenderness</b> in the left iliac fossa .</p> <p>▪ <b>General</b> :Fever , headach anorexia , malaise(FAHM) nausea , vomiting , anaemia ,weakness , dehydration , loss of weight , lymphadenopathy , clubbing of fingers ,</p> </td> </tr> </table>		<p>▪ <b>Gradual</b> onset .</p> <p>▪ It starts by <b>diarrhoea</b>.</p> <p>▪ <b>In ileitis only</b> there is no passage of mucus , pus or bleeding per rectum and no tenesmus.</p> <p>▪ Colicky <b>pain</b> &amp; tenderness in the right iliac fossa simulating acute appendicitis .</p> <p>▪ <b>In long standing cases:</b> Indurated tender <b>mass</b> in the right iliac fossa or <b>I.O may occurs</b>.</p> <p>▪ <b>General manifestations</b> are similar to ulcerative colitis.</p> <p>▪ <b>Crohn's colitis</b> gives similar manifestation as</p>	<p>▪ <b>Acute</b> onset .</p> <p>▪ It starts by severe watery <b>diarrhoea</b>( up to 30 times/day) with passage of <b>mucus , pus and bleeding per rectum</b> are the cardinal feature .</p> <p>▪ <b>Tenesmus</b> is severe .</p> <p>▪ Colicky <b>pain &amp; tenderness</b> in the left iliac fossa .</p> <p>▪ <b>General</b> :Fever , headach anorexia , malaise(FAHM) nausea , vomiting , anaemia ,weakness , dehydration , loss of weight , lymphadenopathy , clubbing of fingers ,</p>
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	<p>ulcerative colitis.</p> <ul style="list-style-type: none"> <li>▪ <b>Perianal</b> disease is common .</li> </ul>	<p>manifestations of extra-intestinal complications.</p> <ul style="list-style-type: none"> <li>▪ <b>Hypovolaemic shock</b> in severe bleeding per rectum .</li> <li>▪ <b>Toxic megacolon</b> : High fever ( 39-39.5 °C ) &amp; severe abdominal distension .</li> <li>▪ <b>Perianal</b> disease is rare .</li> </ul>
<b>D.D</b>	<ul style="list-style-type: none"> <li>▪ <b>Other causes of pain or swelling in the right iliac fossa .</b></li> <li>▪ <b>Other causes of diarrhoea &amp; I.O .</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Other causes of bleeding per rectum .</b></li> <li>▪ <b>Other causes of diarrhoea .</b></li> </ul>
<b>Investigations</b>	<ul style="list-style-type: none"> <li>▪ <b>Laboratory:</b> <ol style="list-style-type: none"> <li>1) <b>Stool analysis .</b></li> <li>2) <b>Blood exam. :</b> .anaemia , leucocytosis , hypoproteinaemia &amp; hypokalaemia .</li> </ol> </li> </ul>	
	<ul style="list-style-type: none"> <li>▪ <b>Barium meal follow through :</b> show areas of strictures with skip normal areas , narrowing of terminal ileum(<b>String sign of Kantor</b>) with proximal dilatation and fistula .</li> <li>▪ <b>Barium enema</b> for suspected colon disease .</li> <li>▪ <b>Colonoscopy &amp;</b></li> </ul>	<ul style="list-style-type: none"> <li>▪ <b>Barium enema :</b> <ul style="list-style-type: none"> <li>♣ Show mucosal changes &amp; shortening of colon with loss of haustrations</li> <li>♣ It is contraindicated in toxic megacolon .</li> </ul> </li> <li>▪ <b>Colonoscopy</b> (show extent of the disease , diffuse inflammation , ulcers and pseudopolyps ) <b>with biopsy are</b></li> </ul>

	<p><b>ileoscopy with biopsy are diagnostic .</b></p> <ul style="list-style-type: none"> <li>▪ <b>U/S &amp; CT</b> to detect extra-luminal complications .</li> </ul>	<p><b>diagnostic .</b></p>
<b>Treatment</b>	<p><b>I) Medical treatment is the main line of treatment ( see medicine ) .</b></p> <p><b>II) Surgical treatment :</b></p> <ul style="list-style-type: none"> <li>▪ <b>Indications :</b> failure of medical treatment or complications .</li> <li>▪ <b>Methods</b></li> </ul>	
	<p><b>1) Limited resection of affected segment</b> (avoid resection of long segment to avoid malabsorption ) .</p> <p><b>2) Strictureplasty</b> for localized stricture .</p>	<p><b>1) Proctocolectomy (</b> excision of whole colon and rectum ) with permanent <b>ileostomy</b> is the classical treatment .</p> <p><b>2) Total Colectomy</b> with rectal sparing and <b>ileo-rectal anastomosis</b> . Follow up for life to avoid rectal cancer .</p> <p><b>3) Proctocolectomy with distal rectal mucosectomy</b> and <b>ileal pouch</b> is fashioned to act as reservoir and is <b>anastmosed to the anal canal</b> within the preserved rectal muscle .</p>

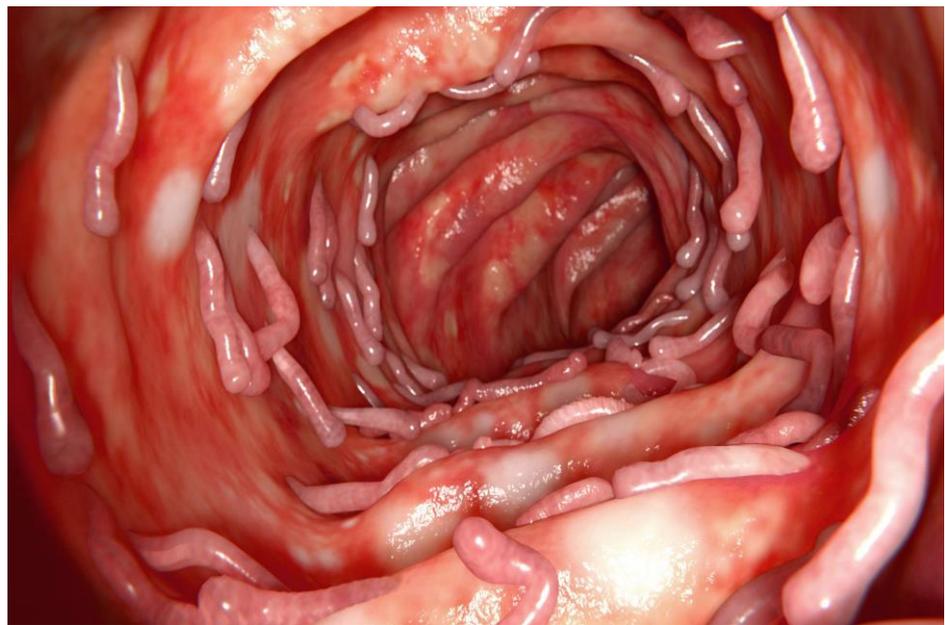


**Crypt abscesses**



**Cobble stone appearance.**

**Pseudopolyps**





**Crohn's Disease**



**Ulcerative Colitis**

## **CLINICAL DIAGNOSIS**

**1. The clinical history can be used to differentiate the various etiologies of chronic diarrhea**

## **& DIAGNOSTIC TESTING**

**2. Lab. Tests**

**3. Colonoscopy and biopsy are the tests of choice to diagnose ulcerative colitis.**

**4. Barium enema**

## **LAB. TESTS**

**1. stool examinations for ova and parasites and stool culture**

**2. CBC**

**3. Elevated sedimentation rate**

**4. elevated C-reactive protein (ie, >100 mcg/L): Both of these findings correlate with disease activity**

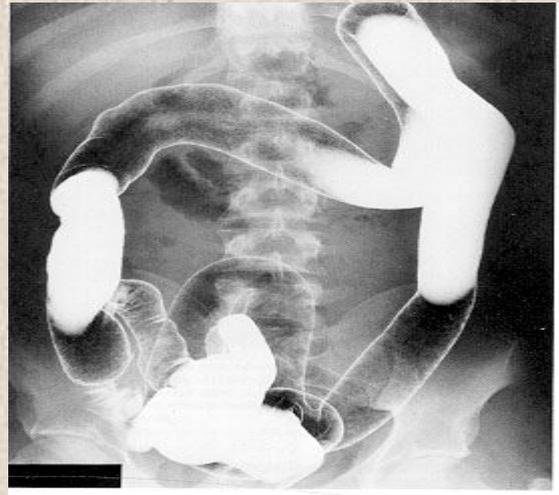
**5. Hypoalbuminemia (ie, albumin <3.5 g/dL)**

**6. Hypokalemia (ie, potassium <3.5 mEq/L)**

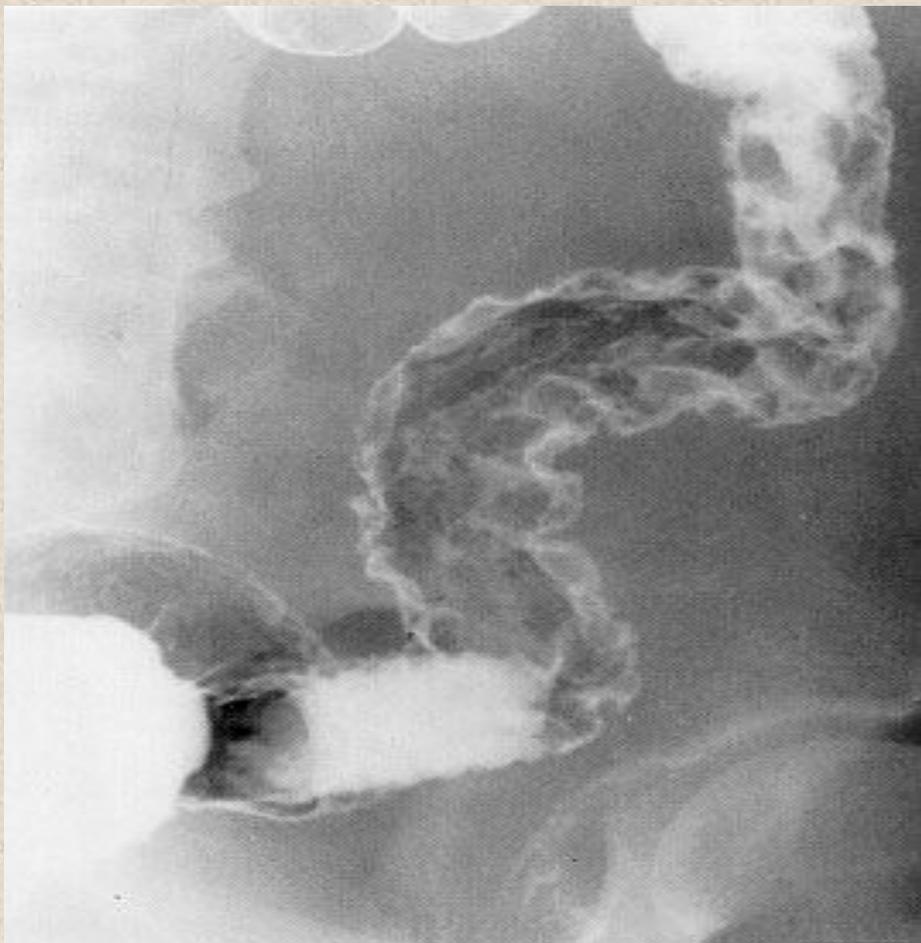
**7. antineutrophil cytoplasmic antibody (p-ANCA), is found more commonly in ulcerative colitis than in Crohn disease**

normal

**Radiology**

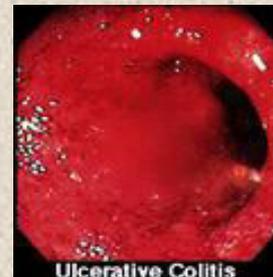
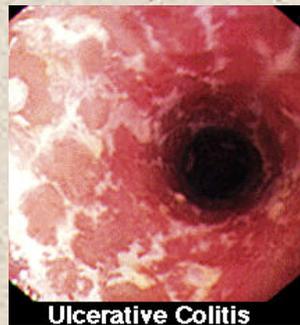


lead pipe apperance in chronic uc





typical vascular pattern, friability,  
exudates, ulcerations,  
and granularity in a continuous,  
circumferential pattern



Barium enema and colonoscopy is contraindicated  
in acute diverticulitis : can cause perforation

**\*The choice of treatment depends on :**

- a. location & severity of the disease.**
- b. presence of complications.**
- c. patient response to treatment**

## Medical treatment

- \* Medical treatment is always the first choice unless emergency surgery is required.
- \* The aim of medical treatment is to control flare ups by reducing the inflammation that trigger symptoms and reduce the chances of further flare ups & complications,

## Medical treatment

↳ Anti-inflammatory  
(Not curative)

- : \* First-line medical therapies
  - 5-aminosalicylic acid- (mesalamine)  
which acts topically from the colonic lumen to suppress the production of numerous proinflammatory mediators
- \* Proctitis has been shown to respond better to suppositories than to oral 5-ASA
- \* response may take three to four weeks.

## Cont. med.treatment

- \*Patients with proctosigmoiditis require delivery of ASA via an enema and may need four to six weeks of therapy to achieve remission.
- \*Patients unable to tolerate the anal irritation of topical 5-ASA may try oral preparations
- \*Patients with pancolitis often require a combination of oral and topical 5-ASA compounds in addition to corticosteroids

## Cont. med.treatment

- \*patients who fail to improve with the maximal dosage of 5-ASA compounds or who cannot tolerate the side effects,
  - oral steroid therapy should be considered.  
Prednisone is given to these patients in dosage of 40 to 60 mg per day.
  - Full-dose therapy is continued until symptoms are completely controlled (usually 10 to 14 days)
  - the dosage is then tapered gradually by 5 mg per week

## Cont. med.treatment

When patients do not respond to orally administered steroids, they should be admitted to the hospital to receive intravenous corticosteroids, such as methylprednisolone sodium (Solu-Medrol)

40 mg daily

\*Hospitalized patients who fail to respond to intravenous corticosteroids after five to seven days are candidates for intravenous cyclosporine (Sandimmune)

## COMPLICATIONS

### 1. Toxic colonic dilatation “Fulminating colitis”:

- a. The most common cause of death in ulcerative colitis
- b. characterized by a thin-walled, large, dilated colon that can eventually become perforated

c. Symptoms & signs include abdominal pain and distension , fever and weakness ,patient become disoriented

**d. Plain radiograph :colonic dilatation diameter > 6 cm**

### 2. Perforation

### 3. Sever haemorrhage

### 4. Benign stricture may rarely cause intestinal obstruction

### 5. Colonic adenocarcinoma develops in 3-5% of patients with ulcerative colitis.

The risk increases with the duration of disease. The risk of colonic malignancy is higher in pancolitis and in cases in which disease occurs before the age of 15 years.

## CANCER SCREENING

: \*the risk of colon cancer is

2 % in the first 10 years of ulcerative colitis,  
8 % during the first 20 years,  
18 % during the first 30 years

\*Patients who have only proctitis or proctosigmoiditis are not considered to be at increased risk of developing colon cancer

## INDICATION FOR SURGERY

1. Severe cases failing to respond to medical therapy or long-term steroid dependence
2. Chronic disease with frequent motions anaemia urgency tenesmus or the disease being present for 7-10 years
3. Severe dysplasia, risk of neoplastic changes
4. Extra intestinal manifestations
5. Indications for urgent surgery include :  
Massive bleeding, perforation, toxic megacolon

# **SURGICAL PROCEDURES**

Surgery can often eliminate ulcerative colitis.

## **EMERGENCY:**

**Total colectomy + ileostomy.**

## **ELECTIVE :**

**Proctocolectomy + ileo anal anastomosis with ileal pouch**

# **BAD PROGNOSTIC CRITERIA**

- 1. age above 60 years**
- 2. The whole colon is involved**
- 3. Sever initial attack**

# Archive

\* 41. Regarding Meckel's diverticulum, which of the following statement is true:-

A-It is a false diverticulum.

B-Resection of the incidental meckel's is indicated in all children.

C-Bleeding Meckel's can be diagnosed by Tc99, scan.

D-The diverticulum arises from the mesenteric side of the small bowel.

E-All Heterotopic tissue in the diverticulum is usually associated with massive bleeding

\* All are true of diverticular disease of the colon except:

a. It increases in frequency with increasing age.

b. Colonoscope is the diagnostic tool during acute attack of diverticulitis.

c. Colovesical fistula is a known complication.

d. Diverticulosis of colon is the most common cause of massive colonic hemorrhage. e. elective resection is indicated after repeated episodes of diverticulitis.

\* The massive rectal bleeding in children is due to:-

a. Anal fissure.

b. Juvenile polyps.

c. Rectal prolapse.

d. Meckel's diverticulum.

e. Intussusception

\* Most common cause of massive lower GI bleeding :

A. Gastric ulcer

B. Diverticulosis

C. Duodenal ulcer

D. diverticulitis

\* Which of the following is true regarding the incidence of Meckel's diverticulum? Select one:

a. It is twice as common in females as in males

b. It commonly occur 2 feet away from the ligament of Trietz

c. It is 2 cm long

d. It contains two main heterotopic mucosa-namely gastric and pancreatic

e. it is a false diverticulum

\* A 64-year-old man with a history of diverticular disease is admitted to the surgical ward with suspected diverticulitis. He has been treated with antibiotics and intravenous fluids but is not improving after 24 hours. The next most appropriate step in the management is: Select one:

- a. Flexible sigmoidoscopy
- b. Total colonoscopy
- c. Barium enema
- d. Watch and wait
- e. Abdominal CT

\* A previously healthy 10-year-old boy presented with a 12-hour history of anorexia, vomiting and pain in the right iliac fossa. Examination revealed a rectal temperature of 38.3, a white count of 13.700/cmm and signs of localized peritonitis in the right lower quadrant. At operation, his appendix and caecum were normal. The Most likely cause of his illness is:

- a. Acute gastroenteritis.
- b. Regional enteritis (Crohn's disease).
- c. Meckel's diverticulitis.
- d. Acute mesenteric lymphadenitis.
- e. Deep iliac adenitis.

\* A 72-year-old woman presents with left iliac fossa pain and is found to have a fever and left iliac fossa peritonism. The most likely diagnosis is:

- a. left ureteric calculus
- b. tubo-ovarian abscess
- c. irritable bowel syndrome
- d. acute diverticulitis
- e. sigmoid volvulus

\* diverticulosis occur in all of following except :

rectum

\* Most common presentation of Meckel's diverticulum :

Gi bleeding

\* Regarding Meckel's diverticulum all of the following are CORRECT, EXCEPT:

- A. It is an acquired diverticulum resulting from an increased intraluminal pressure
- B. It is situated usually 2-3 feet proximal to ileo-cecal junction
- C. It may be silent, discovered incidentally during laparotomy
- D. It may cause intestinal obstruction
- E. It may cause frank bleeding per rectum

\* wrong regarding complications of ulcerative colitis :

fistulas

\* Wrong about ulcerative colitis:

cooble stone

\* wrong about ulcerative:

proctocolectomy

\* commonest site of ulcerative colitis :

rectum

\* Among the followings which is not a complitcation in ulcertive colitis :

intestinal obstruction

\* ulcerative colitis cause all except ...

hyporkalemia

\* indication of surgery in ulcerative colitis...

disease for 10 year

\* Acute toxic dilatation of the colon is typically a complication of ONE of the following:

A. Perforated carcinoma of the colon B. Amebic colitis

C. Ulcerative colitis

D. Large bowel obstruction

E. Ischemic colitis

\* Wrong about ulcerative colitis:

A. Commonly causes enteroenteric fistula

\* We can know the following information from a barium enema in ulcerative colitis, except:

A. Short colon

B. Loss of mucosal haustrations of the large bowel.

\* Which one of the following statements regarding the risk of cancer in the context of ulcerative colitis is true

a- after 10 years of active disease, the risk of cancer approximates 20% .

b- after 10 years of active disease, the risk of cancer approximates 2% to 3%

c- The risk of colon cancer in ulcerative colitis is identical to controls

d- after 20 years of disease activity, the risk of colon cancer approximates 80%

e- after 20 years of disease activity, the risk of colon cancer may be as much as 12%

لا تمل ،، أتمل طريقك ،، إنا لله يحب العبد اللّاح

