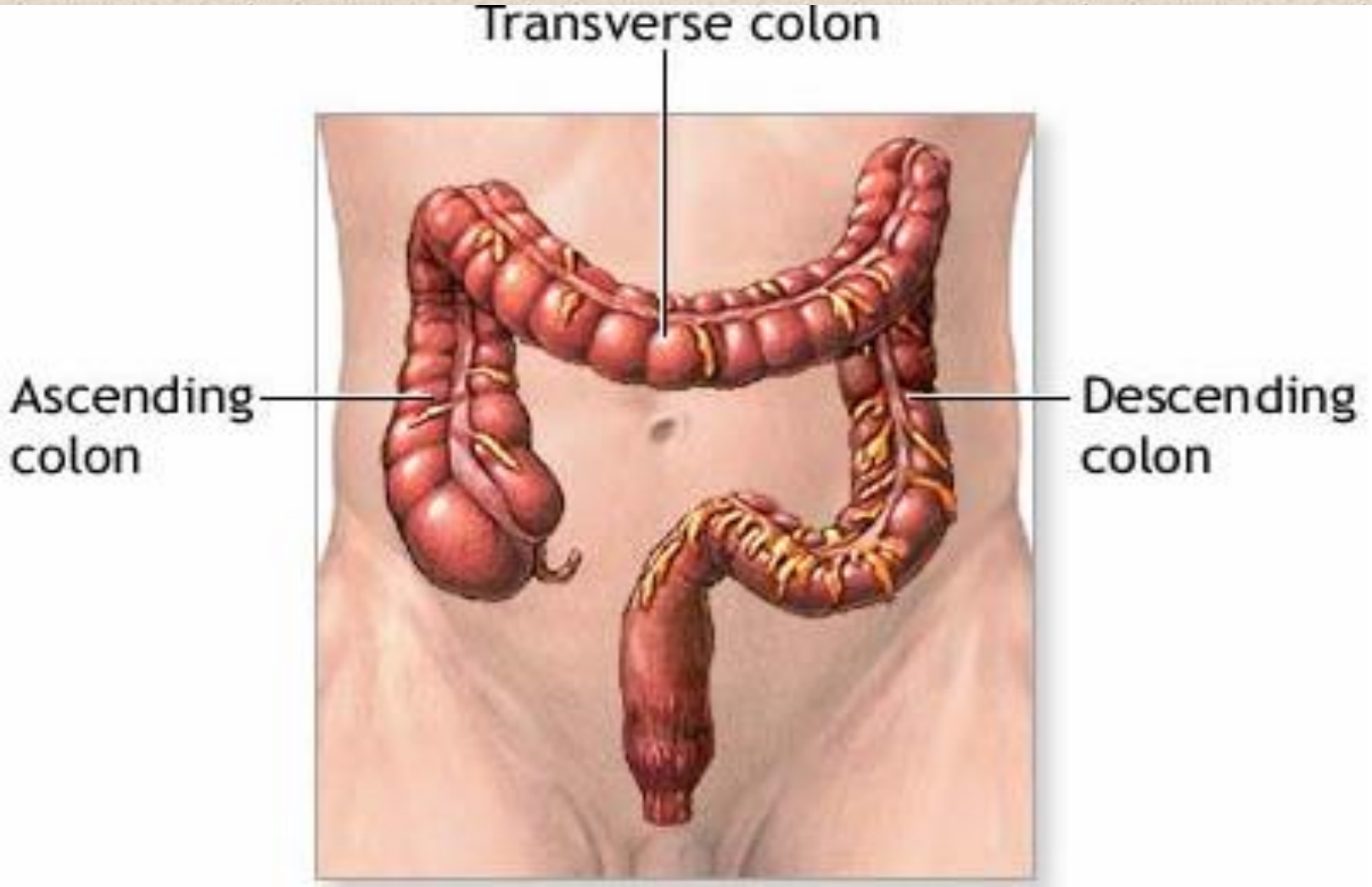
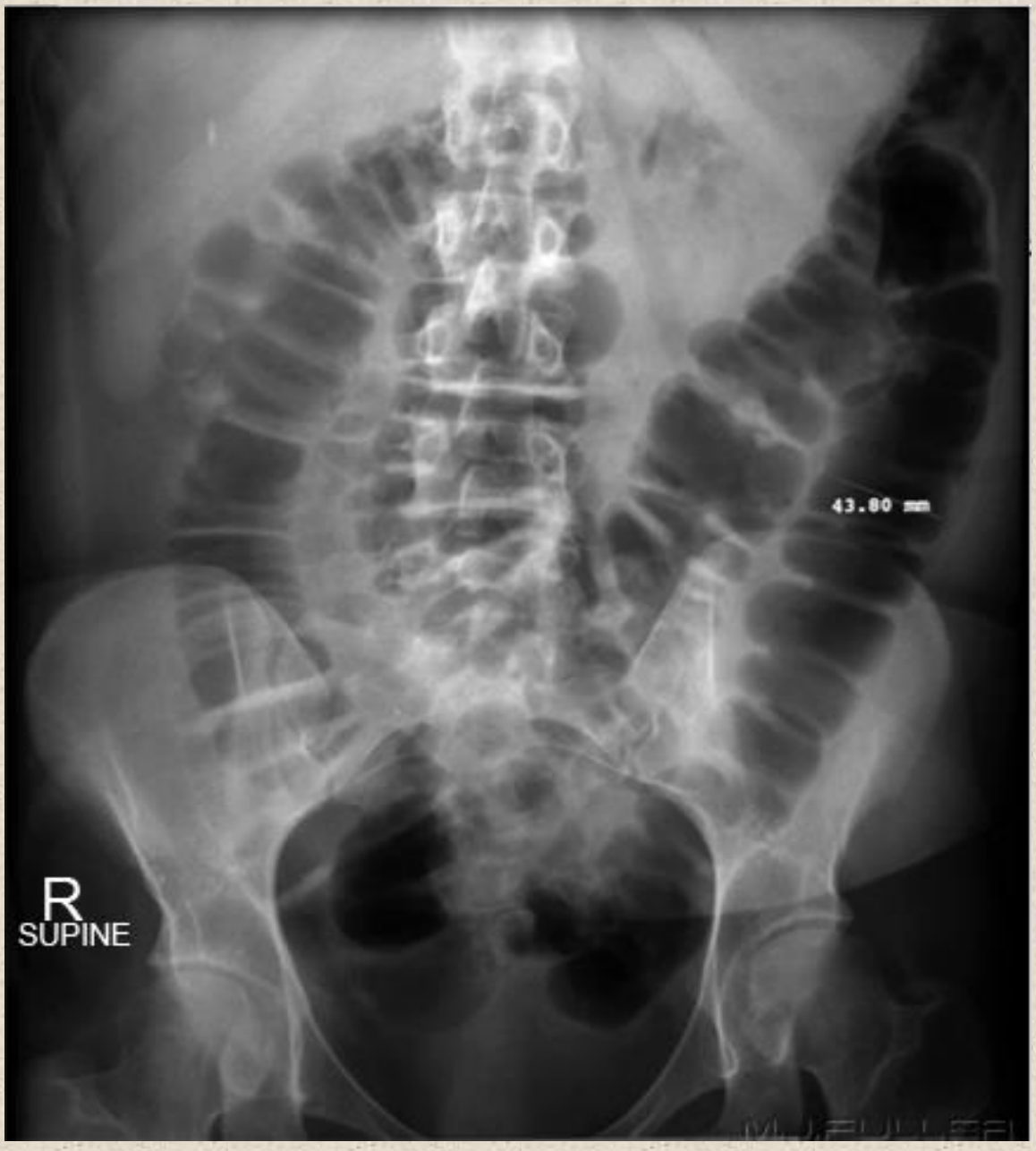
LARGE INTESTINE

surgical anatomy



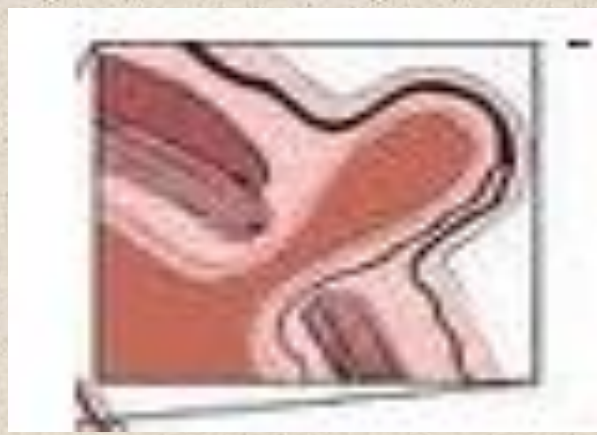
Clinical anatomy



Diet and large bowel diseases

* **Diet quality:**
  - Fibre diet
  - Antioxident rich diet
  - Dietary lectins
  - Carcinogens in diet
* **frequency of defecation &contact time**

DIVERTICULOSIS 0f THE COLON

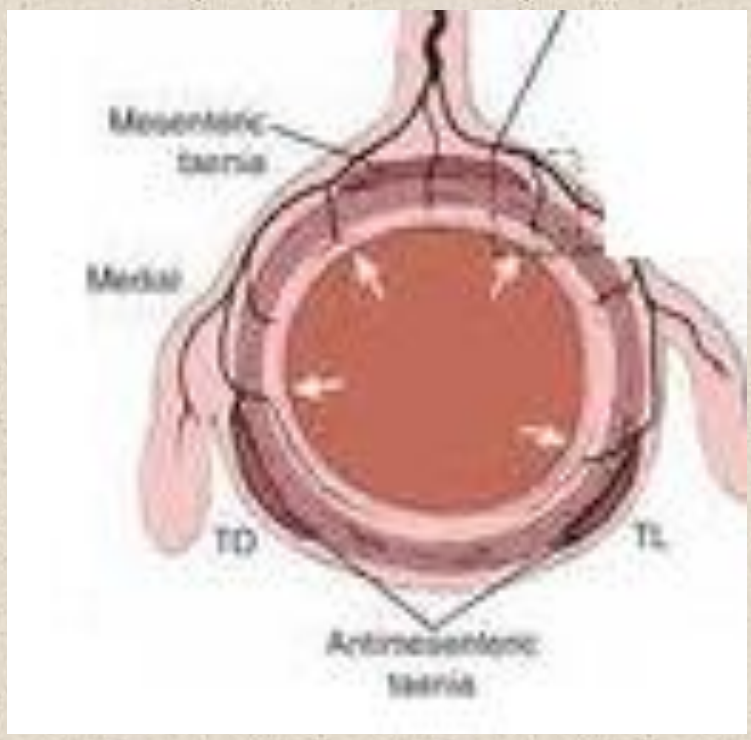


Is a sac like protrusion in the colonic wall,

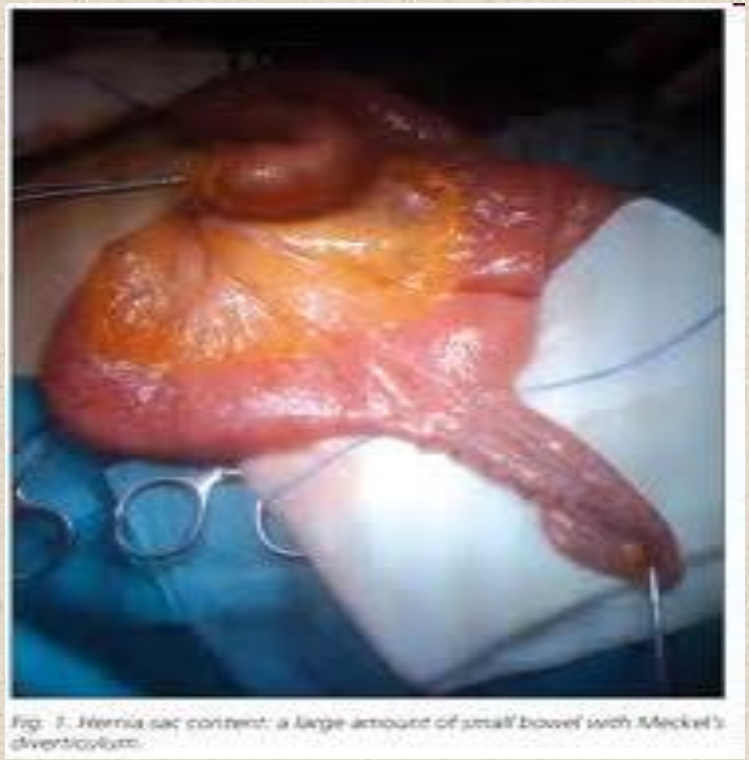
developes as a result of herniation of mucosa and sub mucosa

through a point of weekness in the muscular wall.

DIVERTICULOSIS 0f THE COLON



Colonic diverticulum



Meckle diverticulum

DIVERTICULAR DISEASE

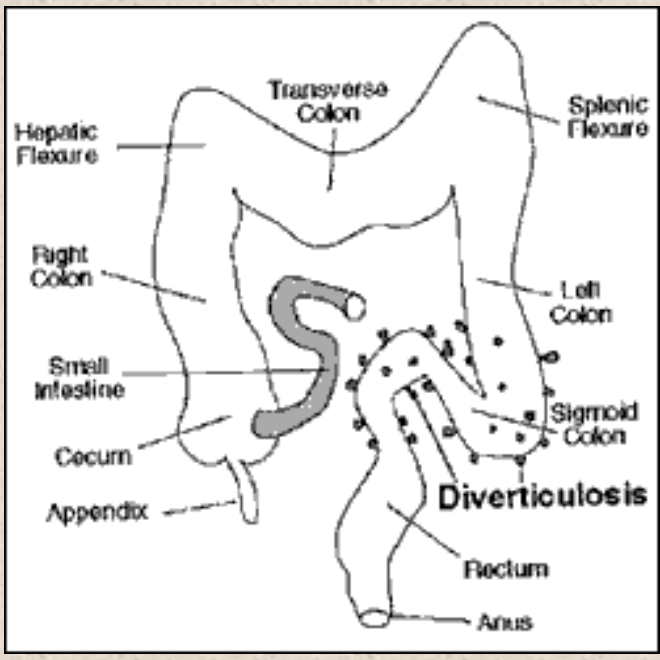
1. Typically acquired disease ,rarely may be congenital. 2.increase with age

5% befor age of 50 y

30%after age of 50y

50 % over 70y

66% over 85y



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.

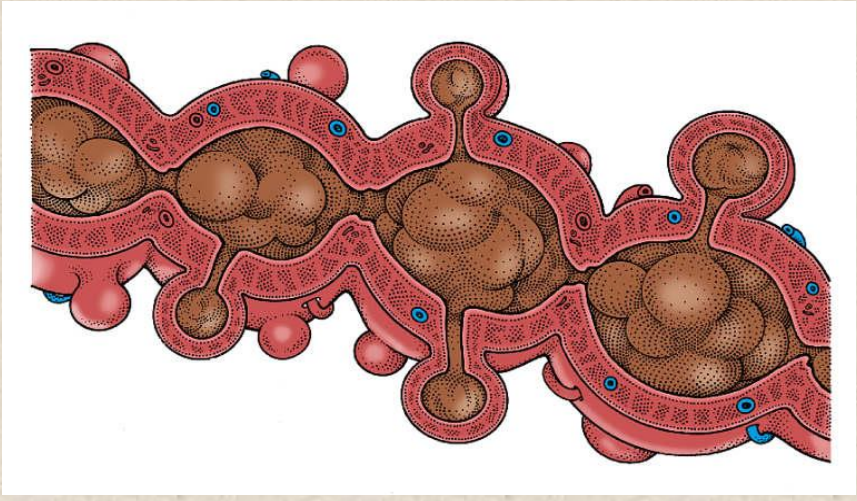
3. **Predisposing factors:**

a.obesity

b. dec. physical activity

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

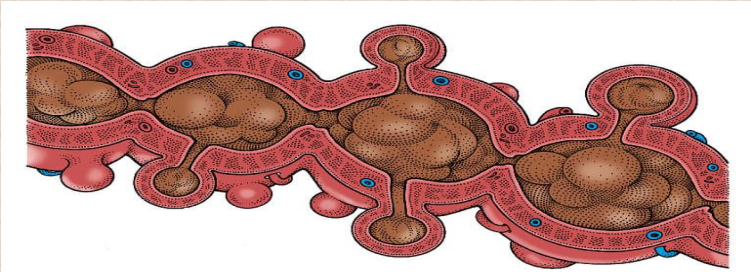
> constipation is the main cause of increased pressure in the colon, making the muscles strain to move stool that is too hard.



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

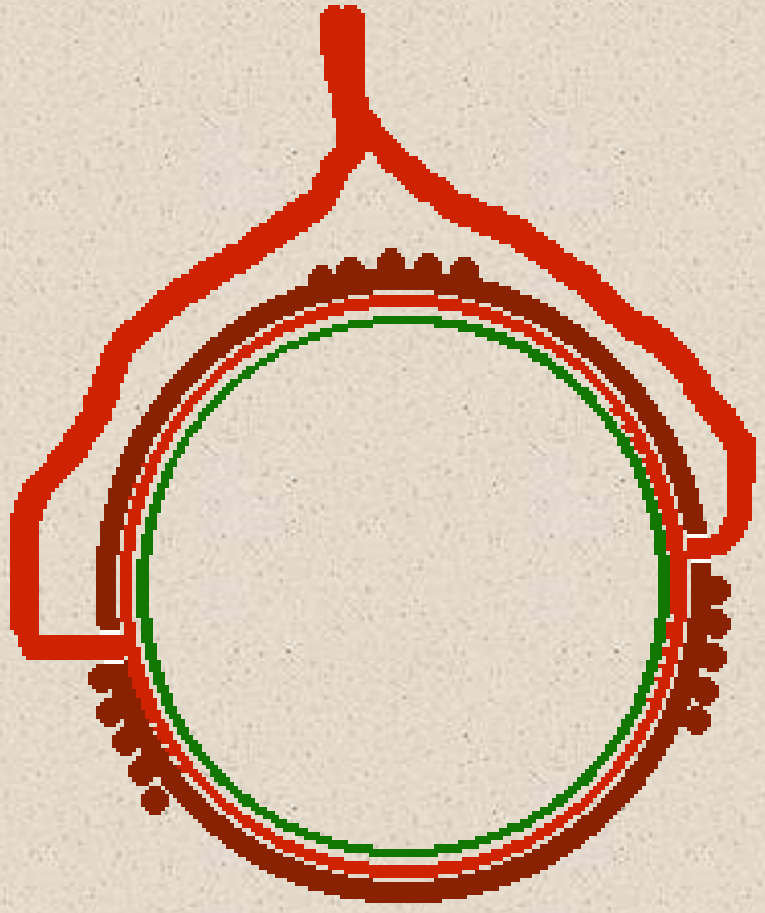
PATHOLOGY:

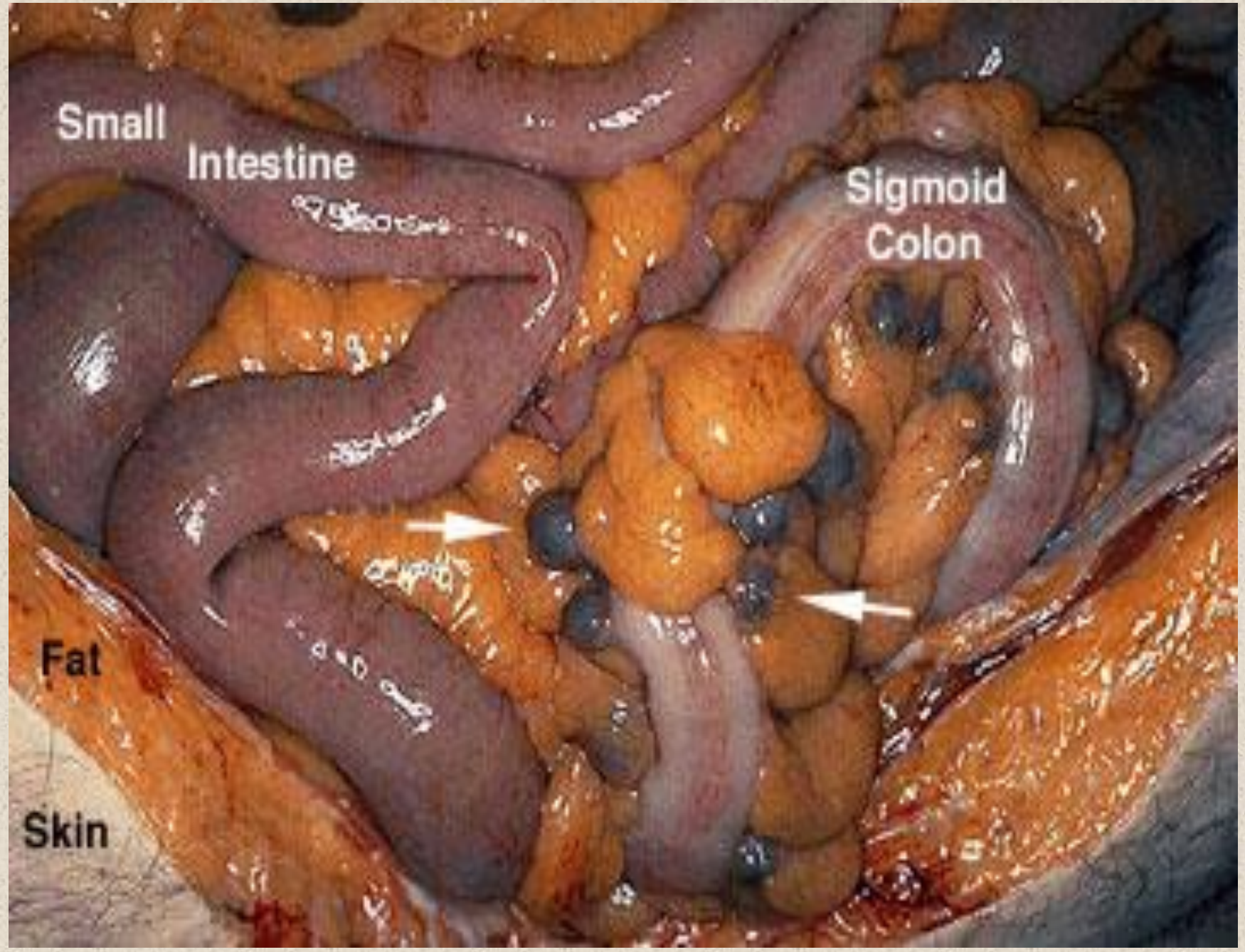
1. **It is a pseudo diverticulum**
2. **Usually found between mesenteric &anti mesenteric taenia**
3. **occures at the week sites in the circular m.,mesen.vesseles penetration.**
4. **Elevated I.L. pressure by tonic &rythmic contractions result in segmentation** " nonpropulsive contractions produce isolated segments"



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

Pathology




Small
Intestine
Sigmoid
Colon
Fat
Skin

TERMINOLOGIES

Diverticulosis:

The presence of multiple diverticulae "generally implies to an absence of symptoms"

Diverticular disease:

Any clinical features caused by diverticulae including complications

Diverticulitis:

The presence of inflamatory process associated with diverticulae.

CLINICAL FEATURES

DIVERTICULOSIS

1.Usually asymptomatic

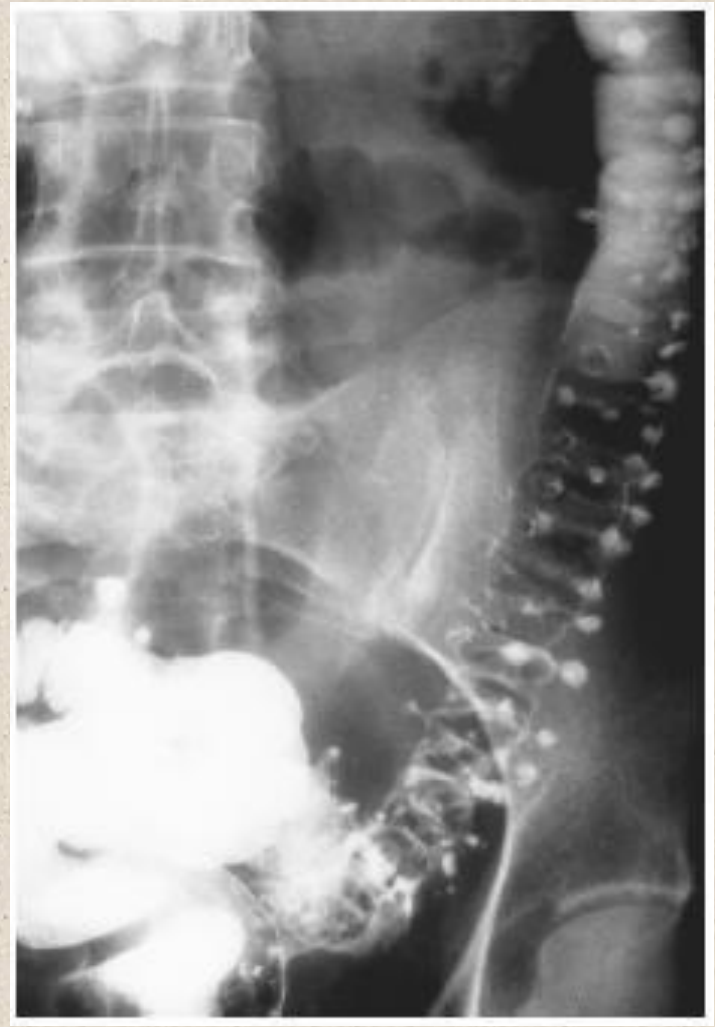
2.Lower abdominal colicky pain & flatulence which disapear after defecation

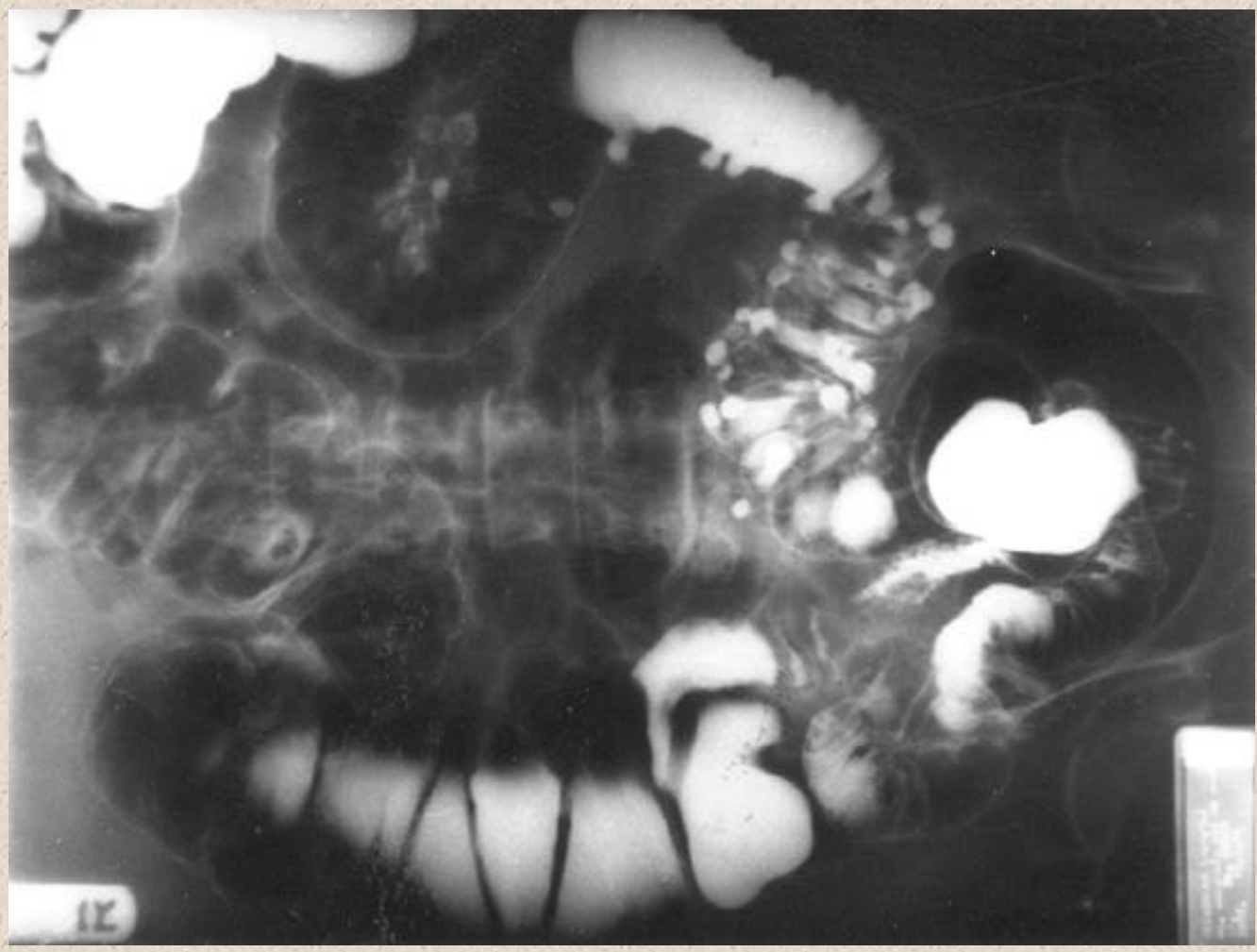
Symptoms & signs of acute diverticulitis:

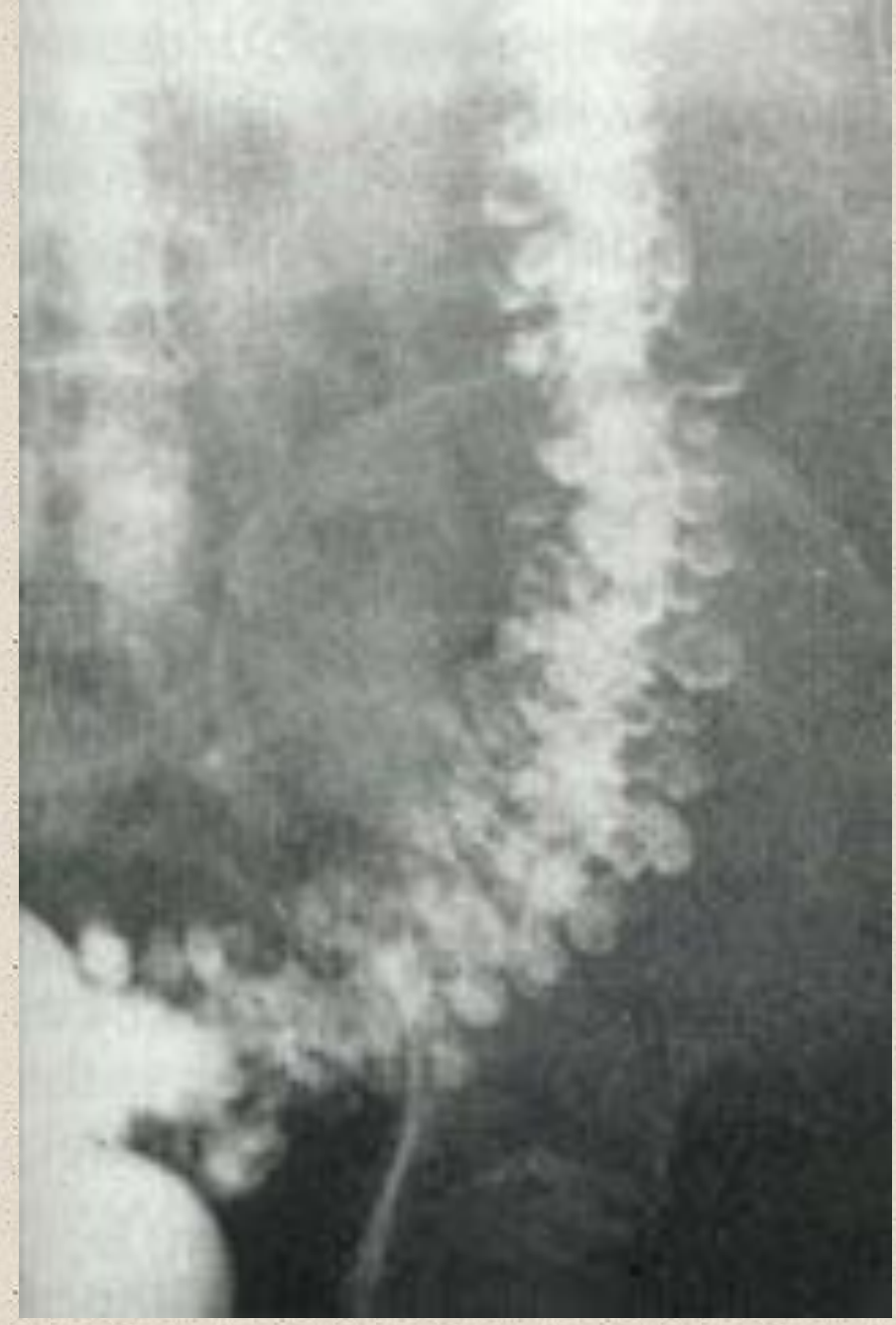
a. Acute lt. Lower quadrant pain : severe &deep
b. Nausia & vomiting
c. Fever,chills
d. constipation,or alternating with bouts of diarrhoe
e. urinary symptoms:dys,freq. Urg.
f. Tenderness,guardenning lt. lower quadrant
g. leucocytosis
h. Per rectal exam.:tender lt.side

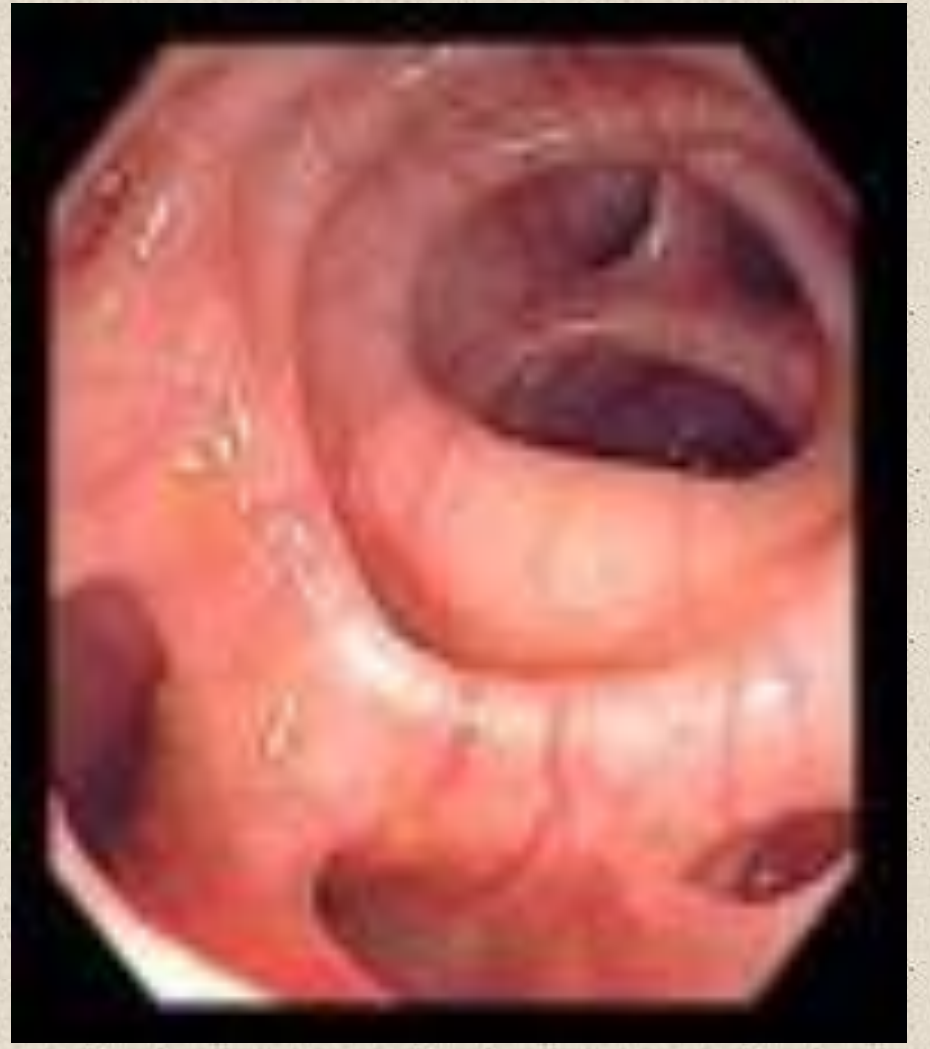
DIAGNOSIS

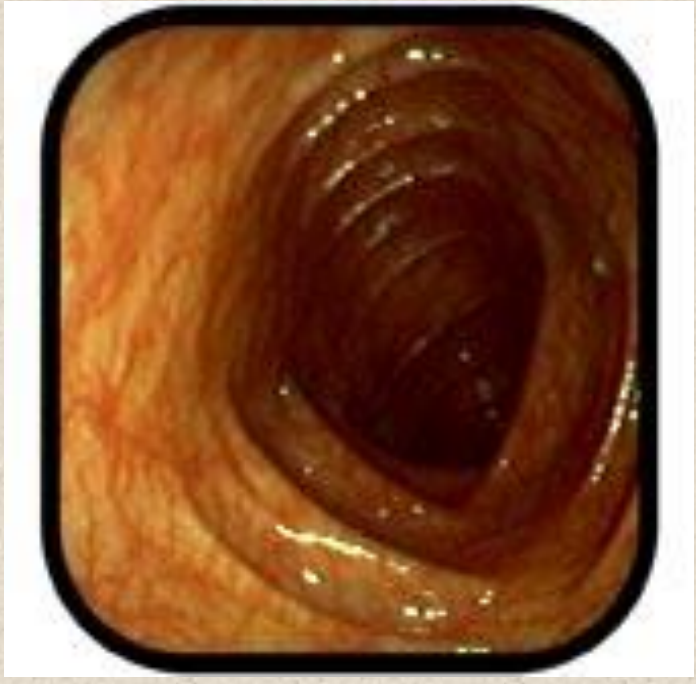
1. **Clinical features**
2. **Radiology,Barium enema**
3. **sigmoidscopy,colonoscopy**
4. **CT**
5. **U/S**

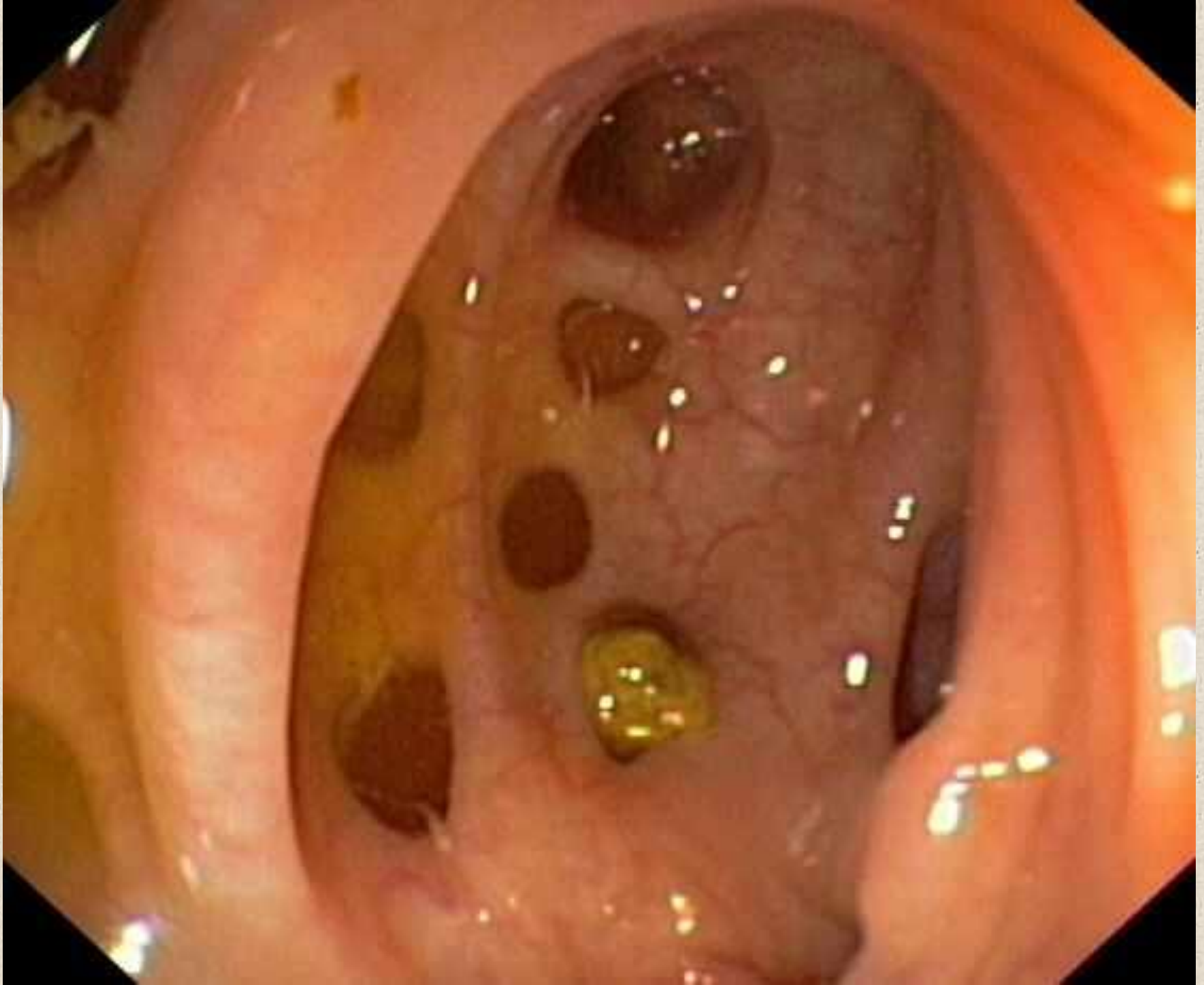


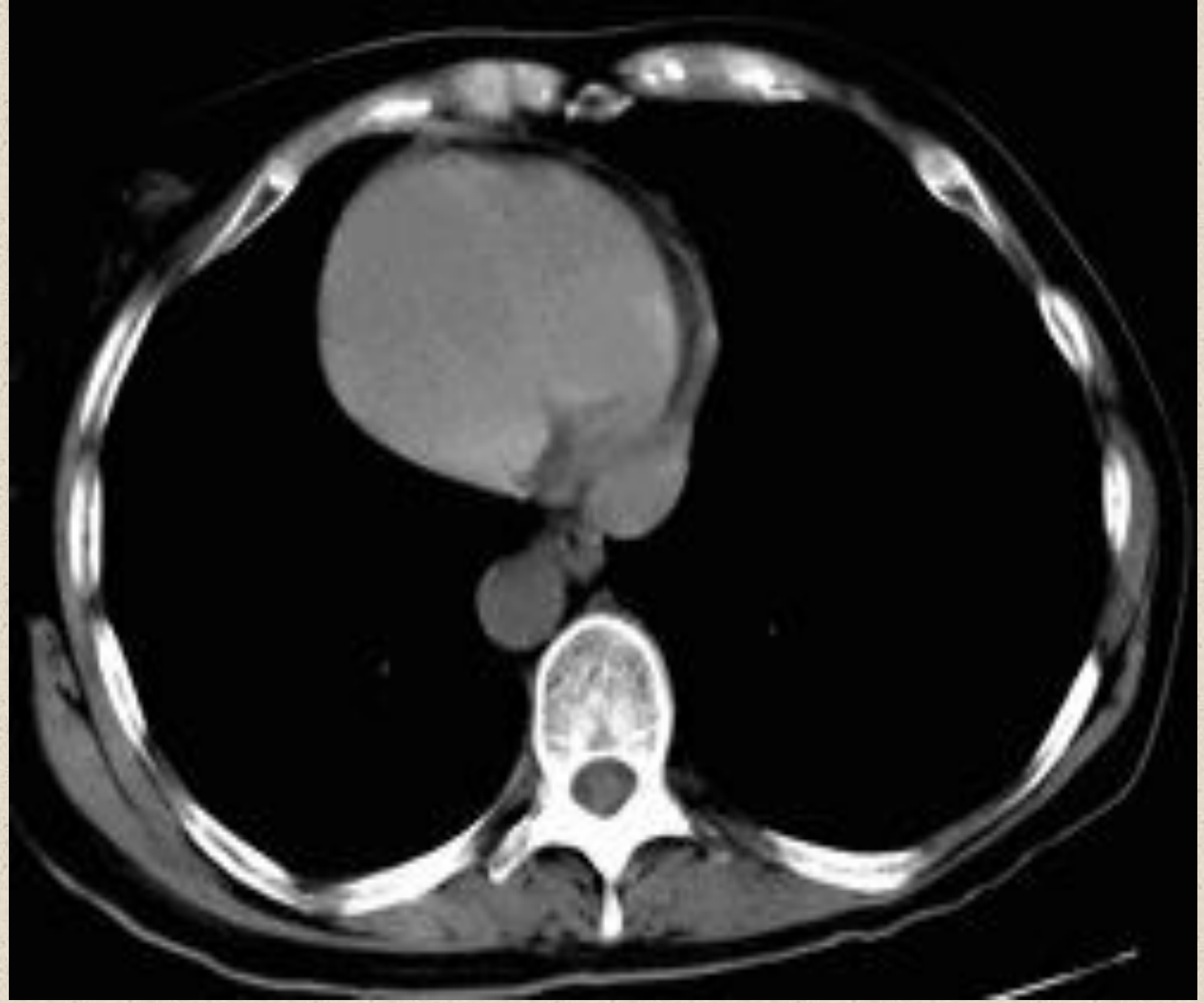












COMPLICATIONS

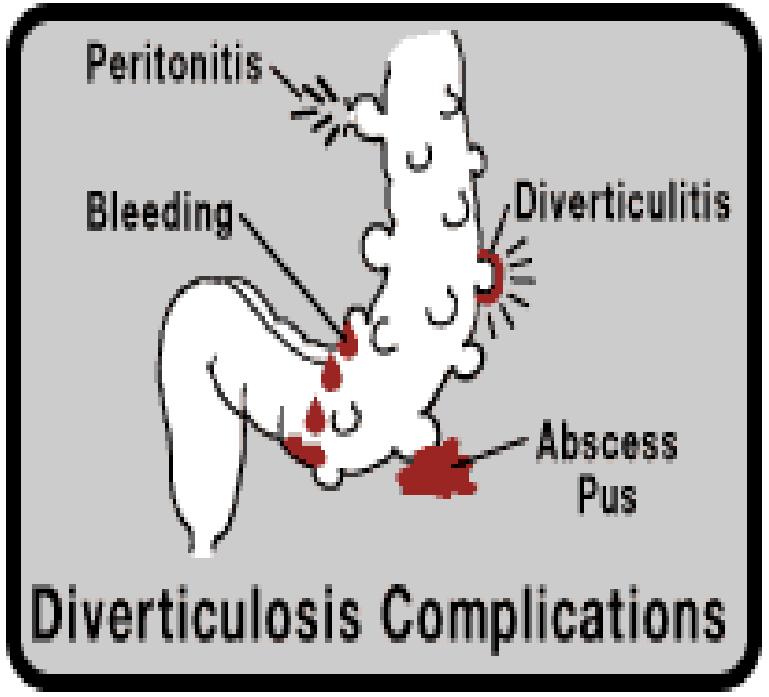
1.Abscess

- **Stage I - Pericolic abscess**
- **Stage II - Pelvic abscess**
- **Stage III - Purulent peritonitis**
- **Stage IV - Feculent peritonitis**

2. Bleeding

3.fistula formation

4. Intestinal obstruction



TREATMENT

DIVERTICULOSIS :

1. Hight 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

b. liquid diet or Administer intravenous fluid as indicated.

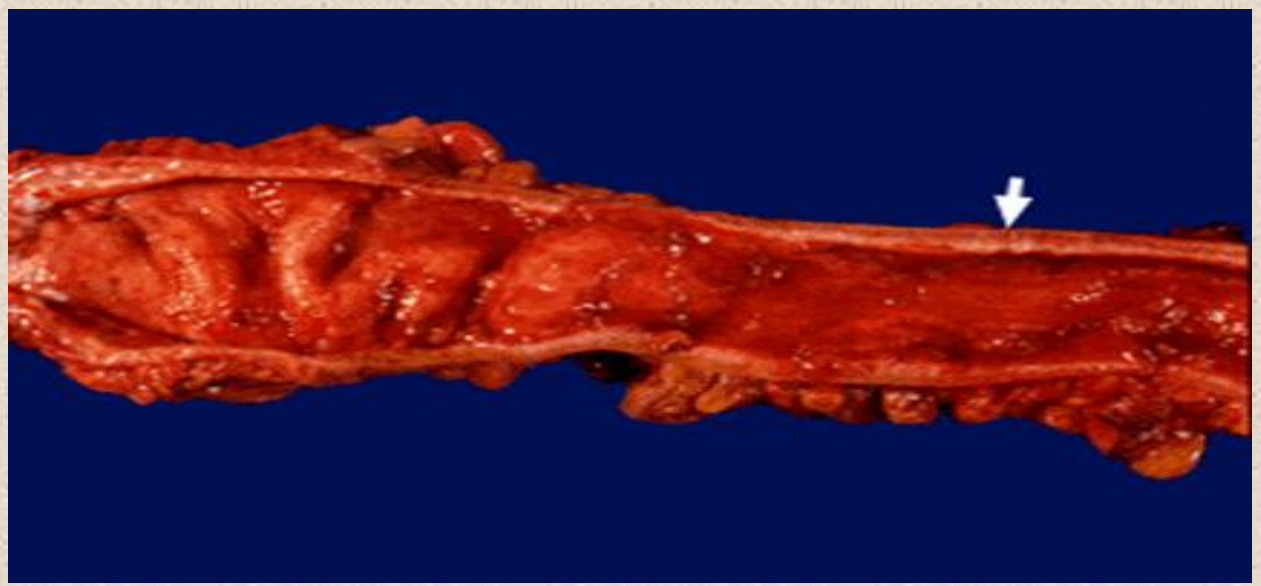
c.insert a nasogastric tube if patient is vomiting or colonic obstruction is suspected

d. Treating up the infection &inflamation :
antibiotics cover gram +ve, gram-ve,
& anaerobes

Treatment of complications

1. perforation
2. abscess
3. Bleeding
4. Fistula formation
5. Large bowel obstruction

ULCERATIVE COLITIS



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

Epidemiology

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

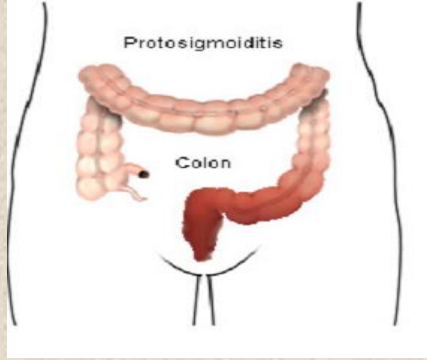
* current smokers with ulcerative colitis tend to have fewer and less severe disease flare-ups.

* 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.

PATHOLOGY



1. The disease starts in the rectum in 90% of the cases

2. Difuse inflamation 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 haemorrahgic spots the engorged vesseles can give rise to bleeding

4. The ulcerated areas are soon covered by granulation tissue ,later end with scarring & shortenning.

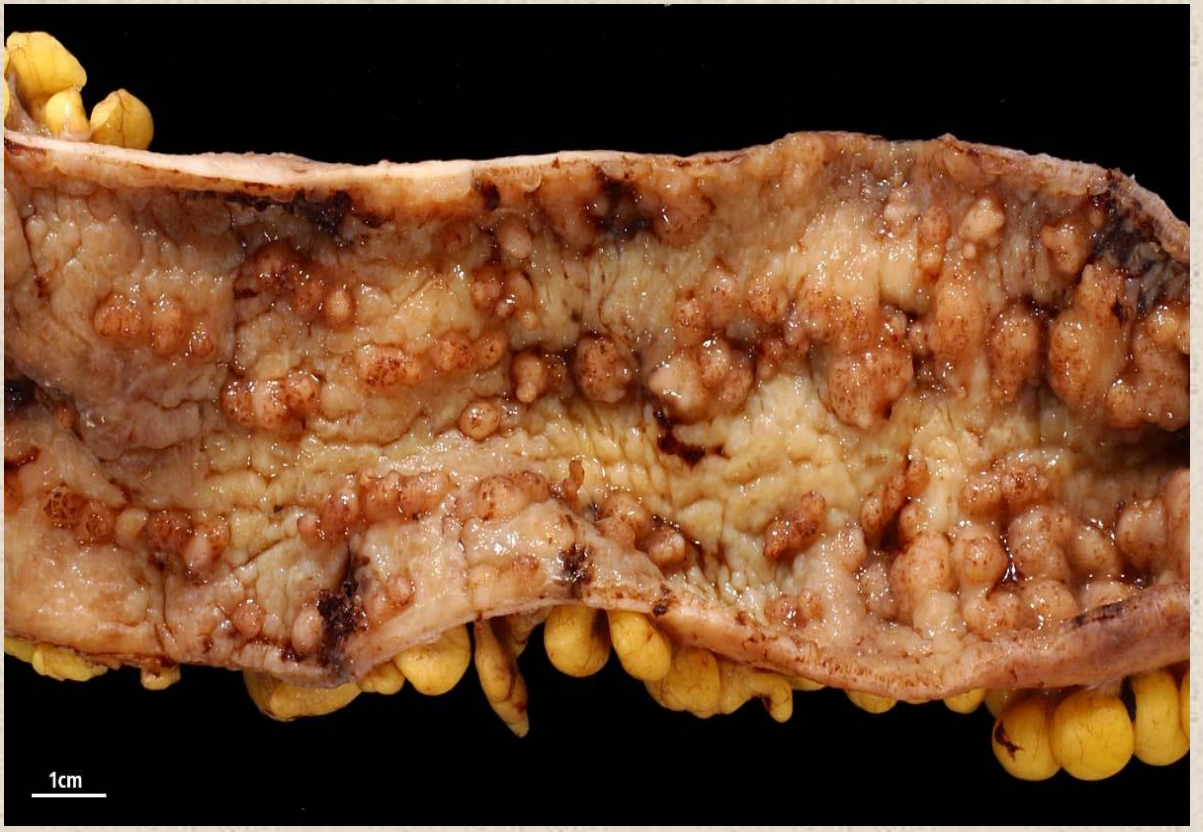
Cont. pathology

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

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

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

pathology



Pseudo polyops

EXTENT OF THE DISEASE

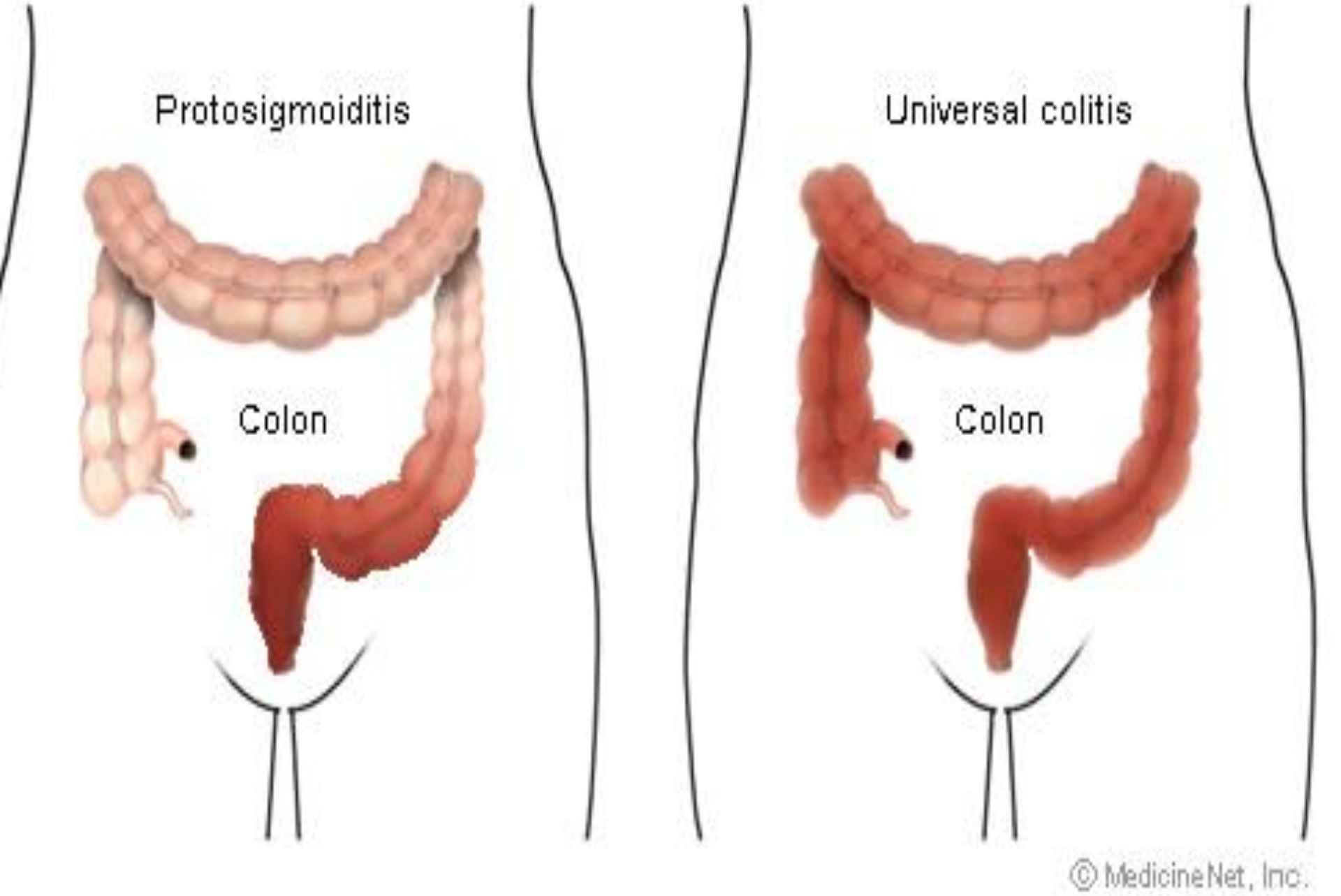
The extent of colonic involvement can often, but not always, be predicted by the degree of symptomatology exhibited by the patient

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,


Protosigmoiditis
Colon
Universal colitis
Colon
© MedicineNet, Inc.

CLINICAL FEATURES

1.The hallmark symptoms of ulcerative colitis are :

- **intermittent bloody diarrhea**
- **rectal urgency**
- **tenesmus**

2.Abdominal pain,cramping ,subside after bowel movement

3. WT loss

4.Extra intestinal manefestation 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

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 inflamatory diseases.

2. Both are of unknown etiology

3. Both have no cure following medical treatment

4. Both have exrtra intestinal manefestations

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

CLINICAL DIAGNOSIS

& DIAGNOSTIC TESTING

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

2. Lab. Tests

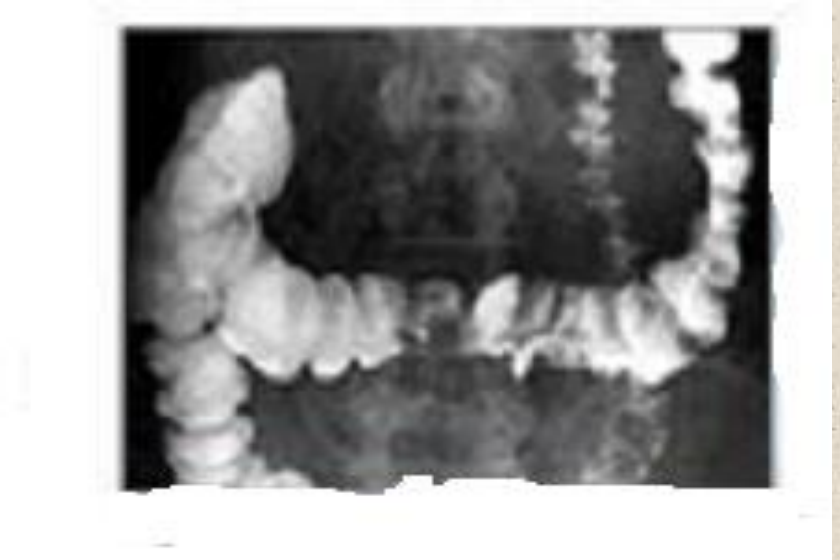
3. Colonoscopy and biopsy are the tests of choice to diagnose ulcerative colitis.

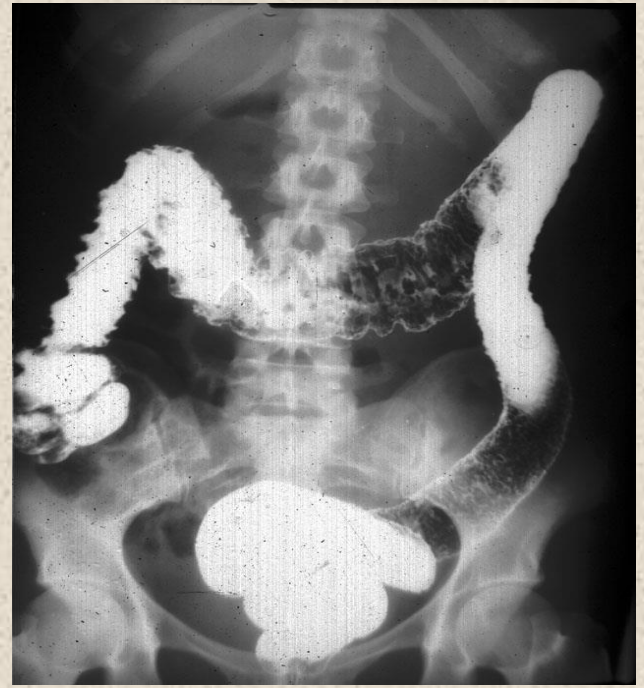
4.Barium enema

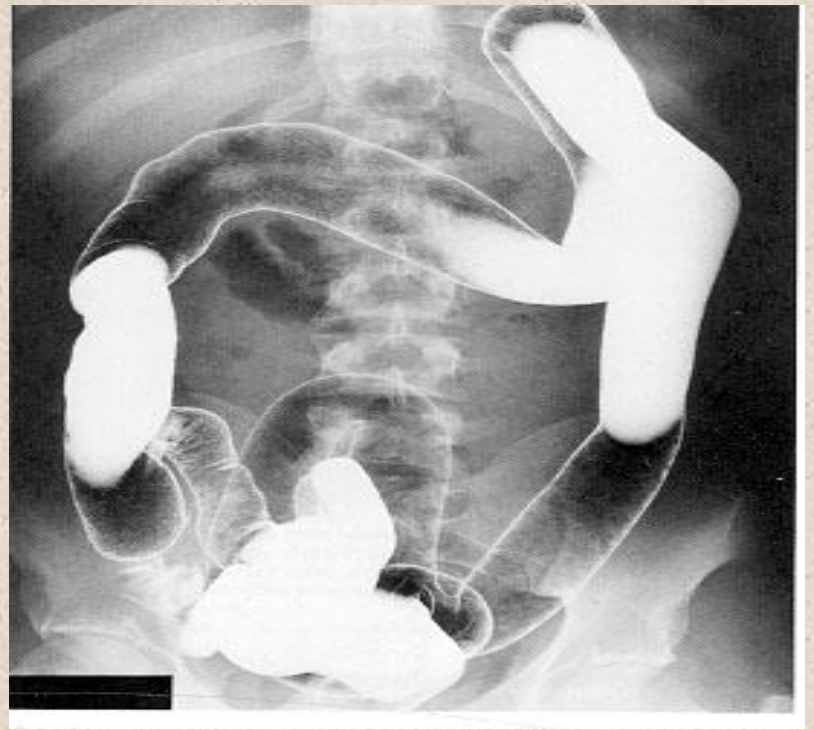
LAB.TESTS

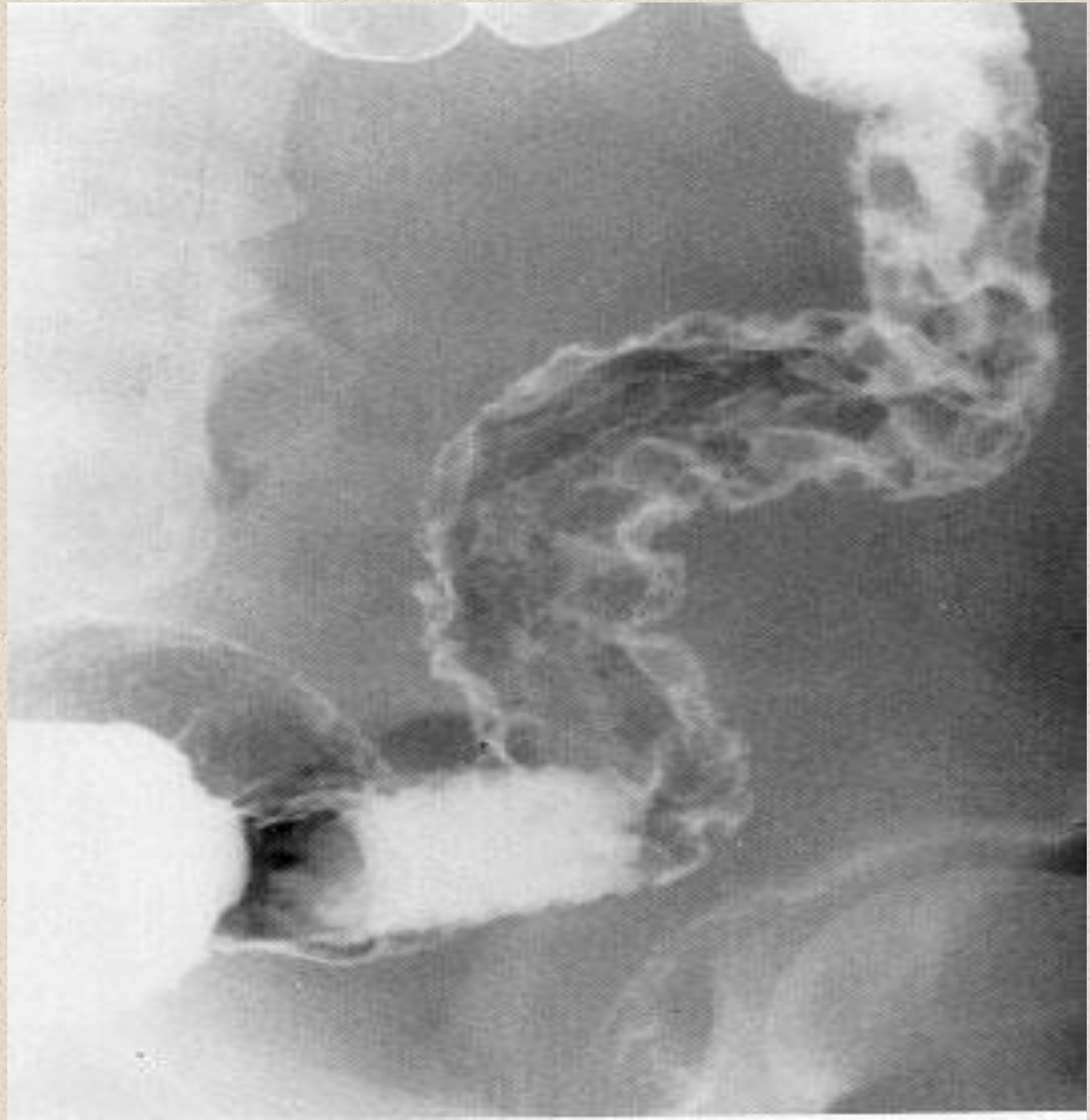
1. stool examinations for ova and parasites and stool culture
2. CBC
3. Elevated sedimentation rate
4. elevated C-reactive protein (ie, >100 mcg/L):Both of these findings correlate with disease activity
5. Hypoalbuminemia (ie, albumin <3.5 g/dL
6. Hypokalemia (ie, potassium <3.5 mEq/L
7. antineutrophil cytoplasmic antibody (p-ANCA), is found more commonly in ulcerative colitis than in Crohn disease

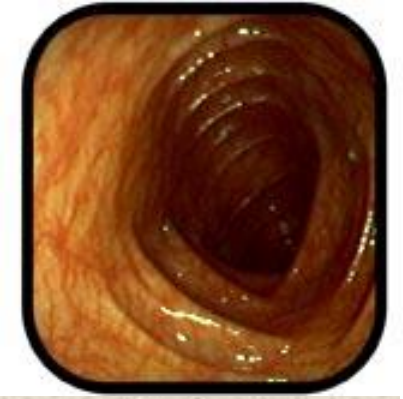
Radiology

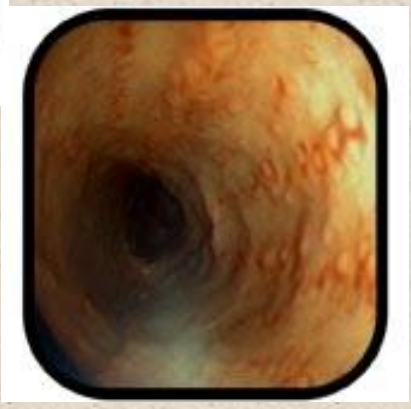


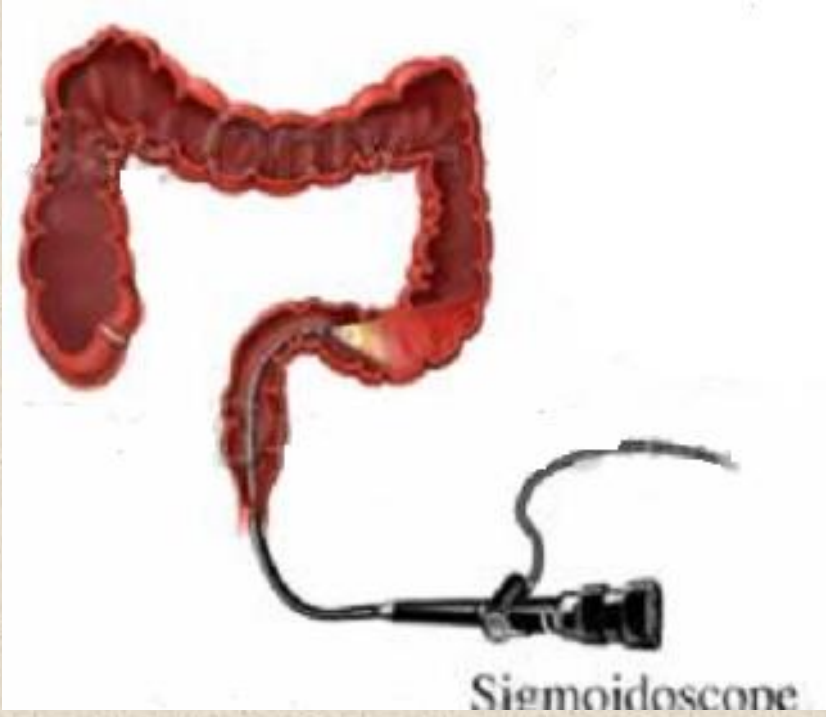






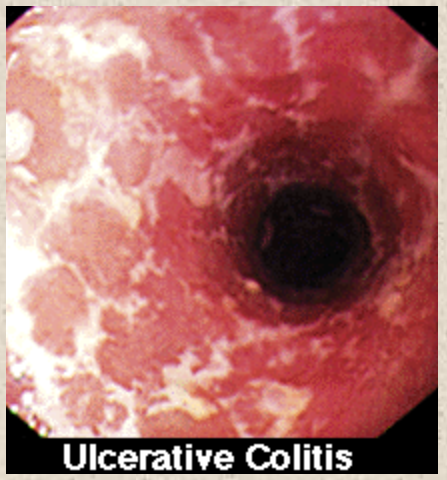


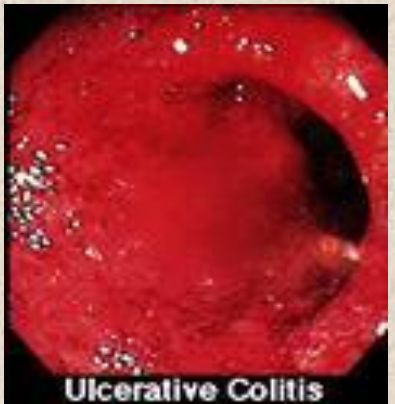




typical vascular pattern, friability, exudates, ulcerations,

and granularity in a continuous, circumferential pattern





***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 inflamation that triger symptoms and reduce the chances of further flare ups & complications,

Medical treatment

* 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 dosag 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 haemorrahge

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.Sever 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.sever dysplasia, risk of neoplastic changes

4. Extra intestinal manefestations

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