

به نام خداوند جان و خرد



# **Gastrointestinal manifestations of chronic pelvic pain in women**

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# CAUSES

- I. Irritable bowel syndrome (IBS)
- II. Inflammatory bowel disease (IBD)
- III. Diverticular colitis
- IV. Colon cancer
- V. Chronic intestinal pseudo-obstruction
- VI. Chronic constipation
- VII. Celiac disease

# IBS

Irritable bowel syndrome (IBS) is a functional disorder of the gastrointestinal tract characterized by chronic abdominal pain and **altered bowel habits**.

The estimated prevalence of IBS globally is approximately **11 percent** .

with a higher prevalence in **younger** individuals and in **women**.

## IBS(cont...)

Abdominal pain in IBS is usually described as a cramping sensation with variable intensity and periodic exacerbations.

The pain is frequently **related to defecation**.

While in some patients abdominal pain is relieved with defecation, a substantial portion of patients report worsening of pain with defecation.

# IBS(cont...)

**Symptoms** of IBS include diarrhea, constipation, alternating diarrhea and constipation, or normal bowel habits alternating with either diarrhea and/or constipation.

Diarrhea is usually characterized as frequent loose stools of small to moderate volume.

**Bowel movements** generally occur **during waking hours**, most often in the morning or after meals.

Patients may have constipation with interludes of diarrhea or normal bowel function,.

## IBS(cont...)

According to the **Rome IV criteria**, IBS is defined as recurrent abdominal pain, on average, at least one day per week in the last three months, associated with two or more of the following criteria

- Related to defecation
- Associated with a change in stool frequency
- Associated with a change in stool form (appearance)

## IBS(cont...)

**Initial evaluation** in all patients with suspected IBS includes a history and physical examination, and limited testing to evaluate for the presence of alarm features concerning for organic disease.

- In **all** patients with suspected IBS, we perform a complete blood count and age appropriate colorectal cancer screening.

- In **patients with diarrhea**, we perform the following:

- C-reactive protein or fecal calprotectin

- Serologic testing for celiac disease



# IBS(cont...)

**Alarm features** concerning for underlying organic disease include:

- Age of onset after age 50 years
- Rectal bleeding or melena
- Nocturnal diarrhea
- Progressive abdominal pain
- Unexplained weight loss
- Laboratory abnormalities (iron deficiency anemia, elevated C-reactive protein or fecal calprotectin)
- Family history of inflammatory bowel disease or colorectal cancer

## IBS(cont...)

In patients who meet diagnostic criteria for IBS and have no alarm features,

we **do not routinely perform** any additional testing beyond the initial evaluation.

## IBS(cont...)

In patients **with alarm features**, we perform additional evaluation to exclude other causes of similar symptoms.

The diagnostic evaluation is **based on the clinical presentation** and usually includes  
endoscopic evaluation in **all** patients  
and imaging in selected cases.

## IBS(cont...)

Most patients with IBS have chronic symptoms that vary in severity over time.

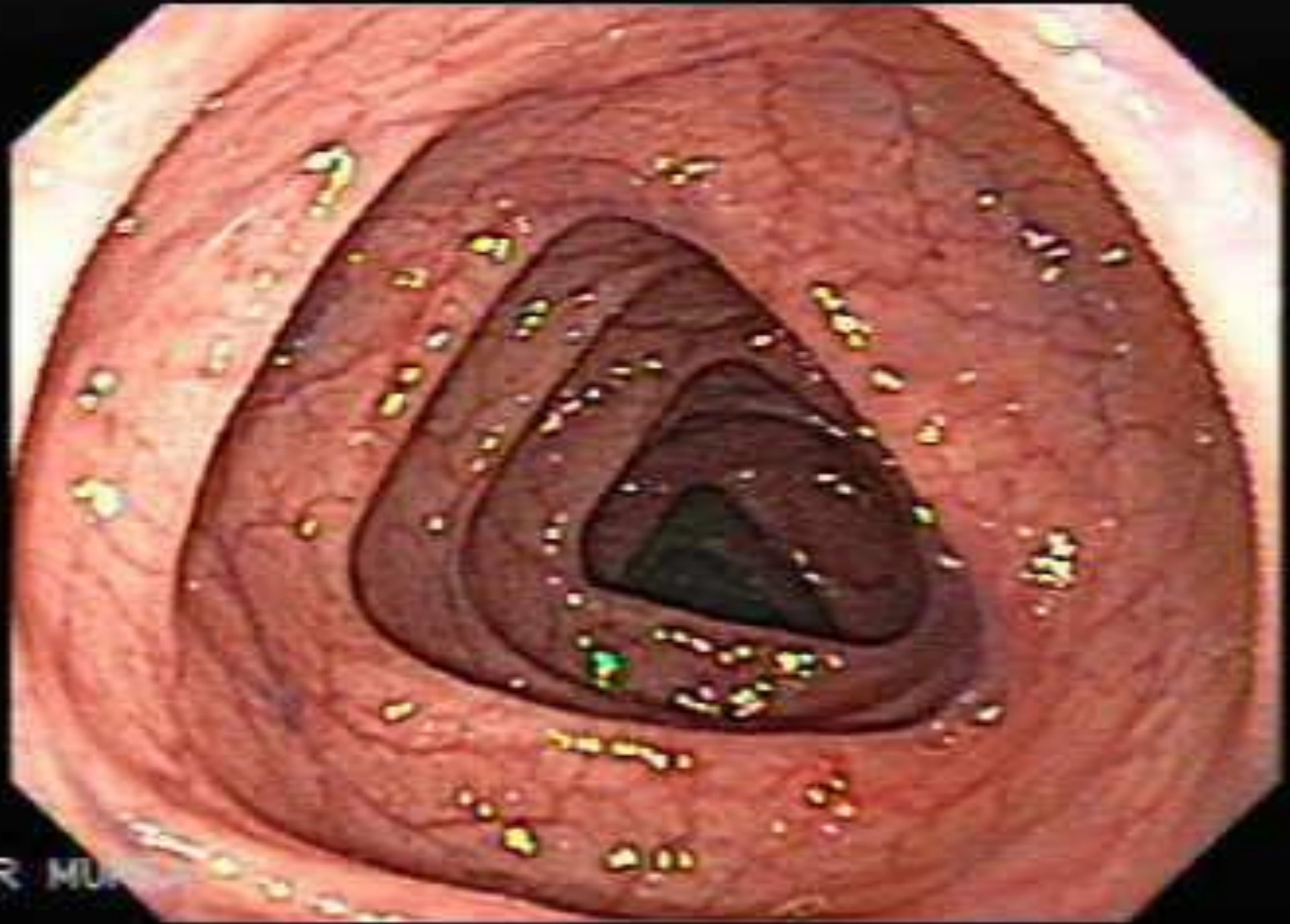
Patients may also experience a change in IBS subtype over time

with the most frequent change being from predominant constipation or diarrhea to mixed bowel habits.

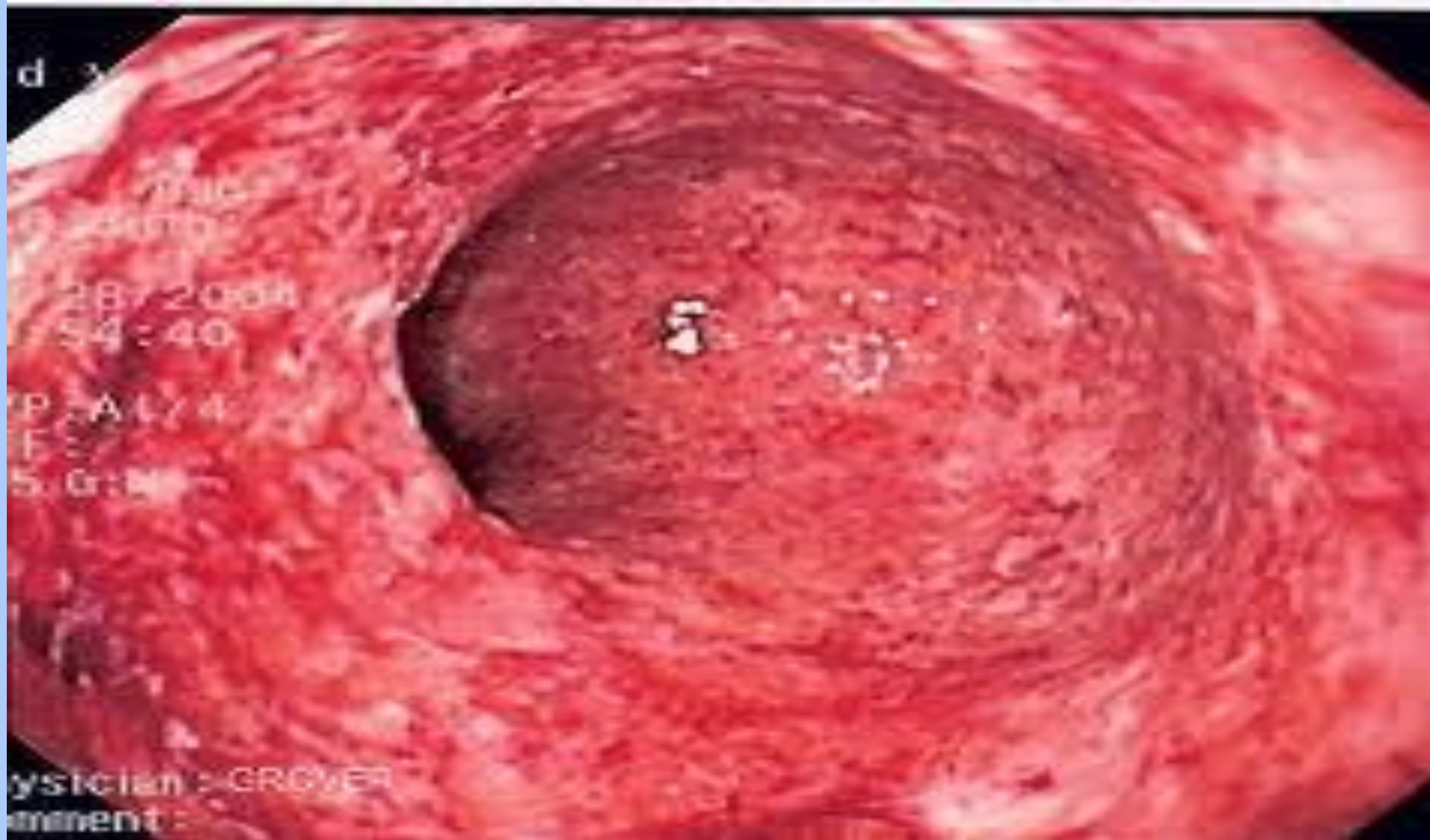
# IBD

**Ulcerative colitis** is characterized by recurring episodes of inflammation limited to the mucosal layer of the colon.

It commonly involves the rectum and may extend in a proximal and continuous fashion to involve other parts of the colon



DR. MU



## IBD(cont...)

Patients with ulcerative colitis **usually present with diarrhea**, which is frequently associated with blood.

Associated symptoms include **colicky abdominal pain**, urgency, and tenesmus.

Patients may also have fever, fatigue, and weight loss.

Ulcerative colitis primarily involves the intestine but may be associated with several extraintestinal manifestations.

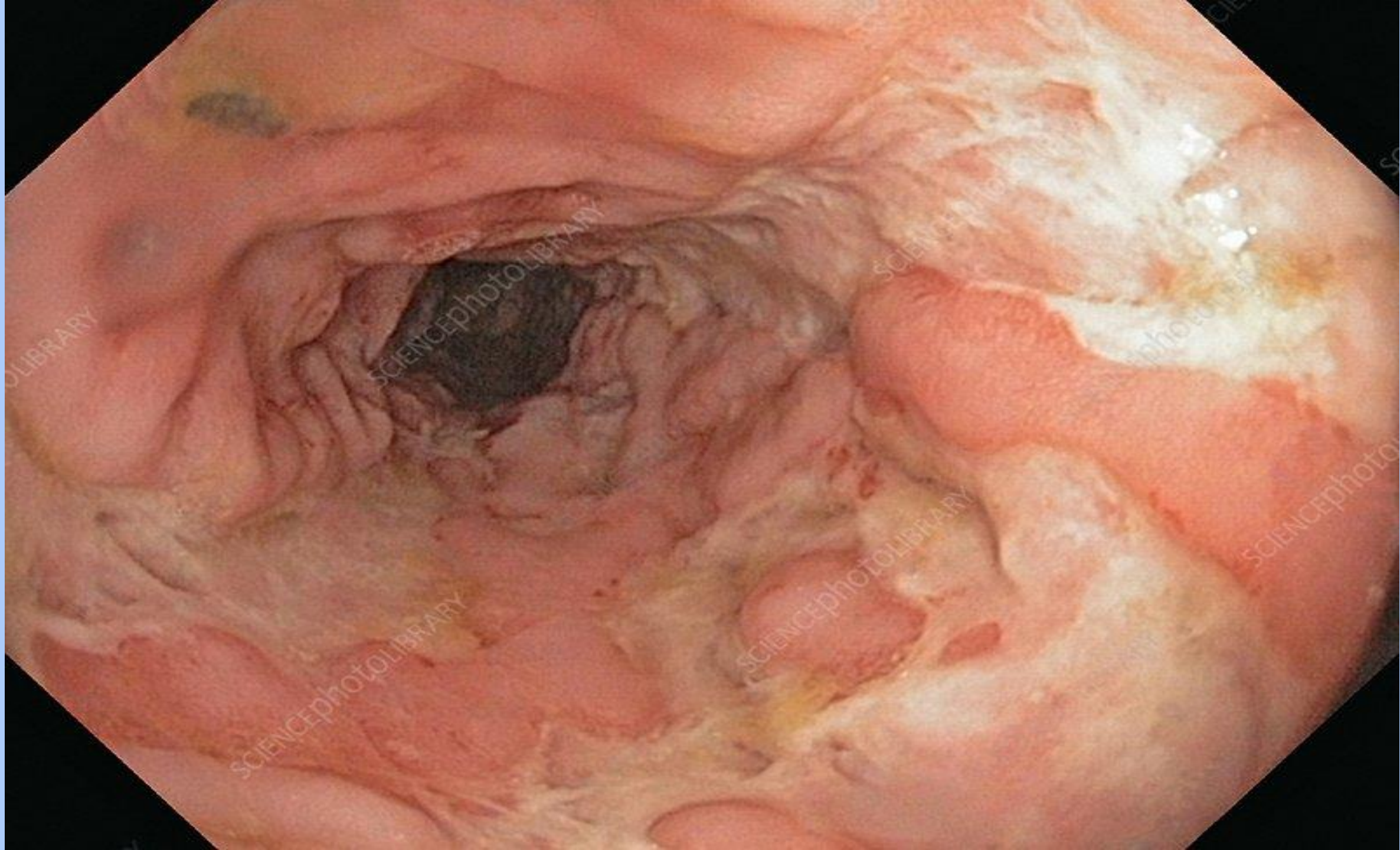


# IBD(cont...)

The clinical manifestations of **Crohn disease (CD)** are more variable than those of ulcerative colitis.

Patients can have symptoms for many years prior to diagnosis.

Fatigue, prolonged diarrhea with **abdominal pain**, weight loss, and fever, with or without gross bleeding, are the hallmarks of CD



## CD(cont...)

- ❑ Approximately 80 percent of patients have small bowel involvement, usually in the distal ileum, with one-third of patients having ileitis exclusively.
- ❑ Approximately 50 percent of patients have ileocolitis, which refers to involvement of both the ileum and colon.
- ❑ Approximately 20 percent have disease limited to the colon.

## CD(cont...)

- ❑ In contrast to **rectal** involvement in patients with ulcerative colitis, one-half of CD patients with colitis have sparing of the rectum.
- ❑ Approximately one-third of patients have perianal disease.
- ❑ Approximately 5 to 15 percent have predominant involvement of the mouth or gastroduodenal area, while fewer patients have involvement of the esophagus and proximal small bowel.

## CD(cont...)

- **Crampy abdominal pain** is a **common manifestation of CD**, regardless of disease distribution.
- The transmural nature of the inflammatory process results in fibrotic strictures. These strictures often lead to repeated episodes of small bowel, or less commonly colonic, obstruction.
- 
- A patient with disease limited to the distal ileum frequently presents with right lower quadrant pain.
- Occasionally, patients will have no clinical manifestations of CD until luminal narrowing causes constipation and early signs of obstruction with abdominal pain.

CD(cont...)

**Fistulas** are tracts or communications that connect two epithelial-lined organs.

Common sites for fistulas connect the intestine to bladder (enterovesical), to skin (enterocutaneous), to bowel (enteroenteric), and to the vagina **enterovaginal**.

CD(cont...)

In a population-based study of patients with CD, the cumulative risk of developing a **fistula** was 33 and 50 percent after 10 and 20 years, respectively .

Up to 45 percent of patients develop a fistula **before diagnosis of CD**

## CD(cont...)

- Enterointestinal fistulas may be asymptomatic or present as a palpable mass
- Enterovesical fistulas lead to recurrent urinary tract infections, often with multiple organisms, and to pneumaturia
- Fistulas to the retroperitoneum may lead to psoas abscesses or ureteral obstruction with hydronephrosis
- Enterovaginal fistulas may present with passage of gas or feces through the vagina



## CD(cont...)

All sinus tracts do not lead to fistulas.

Sinus tracts may present as a **phlegmon**, a walled off inflammatory mass without bacterial infection that may be palpable on physical examination. Ileal involvement is suggested by a mass in the right lower quadrant.

Some sinus tracts lead to **abscess formation** and an acute presentation of localized peritonitis with fever, abdominal pain and tenderness.

**Diffuse peritonitis** due to abscess perforation is a rare but recognized complication of CD.

CD(cont...)

Symptoms and signs related to **perianal disease** occur in more than one-third of patients with CD and may dominate the clinical picture.

These include

perianal pain

drainage from large skin tags

anal fissures

perirectal abscesses

anorectal fistulas.

# DIVERTICULOSIS

Diverticulosis is defined by the presence of diverticula.

Diverticulosis may be asymptomatic or symptomatic.

Diverticular disease is defined as clinically significant and symptomatic diverticulosis due to

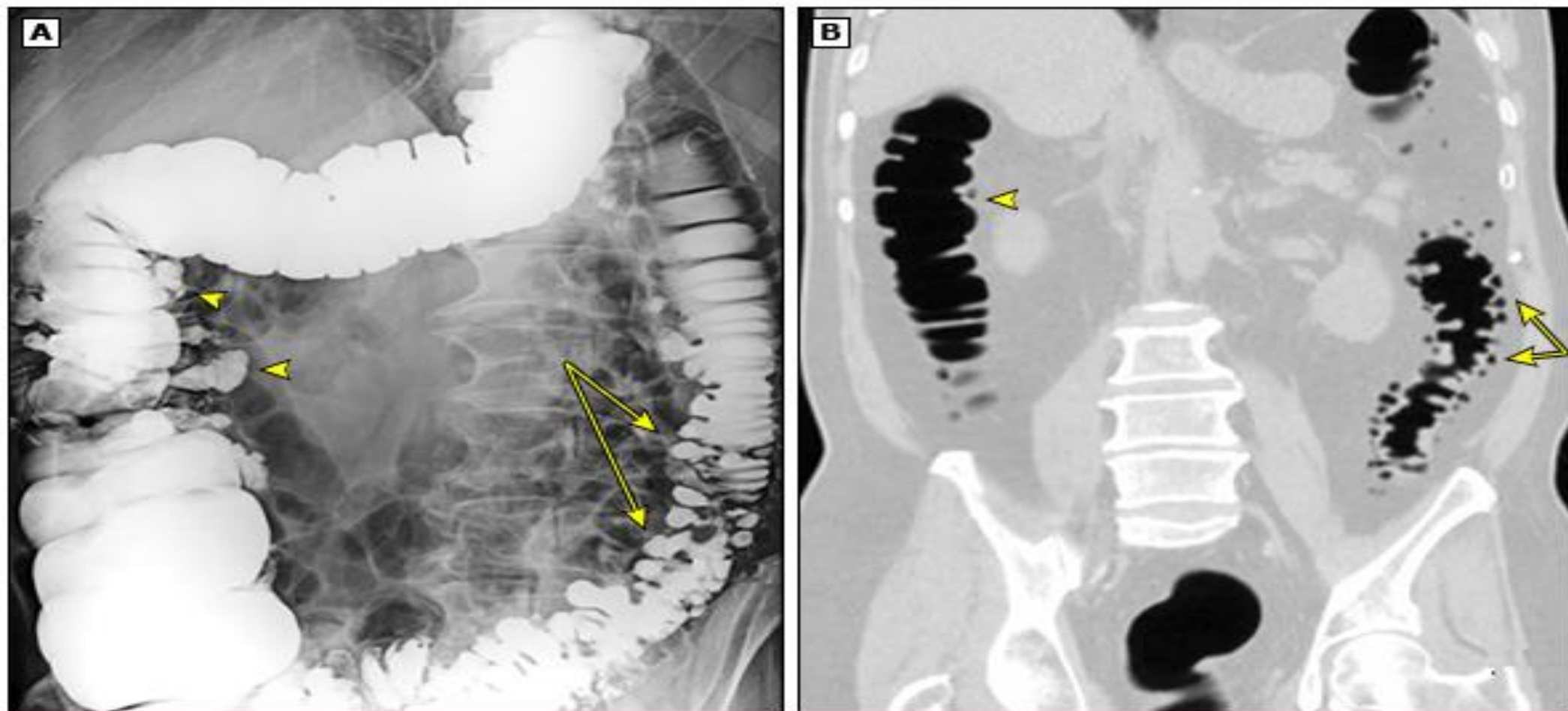
diverticular bleeding

Diverticulitis

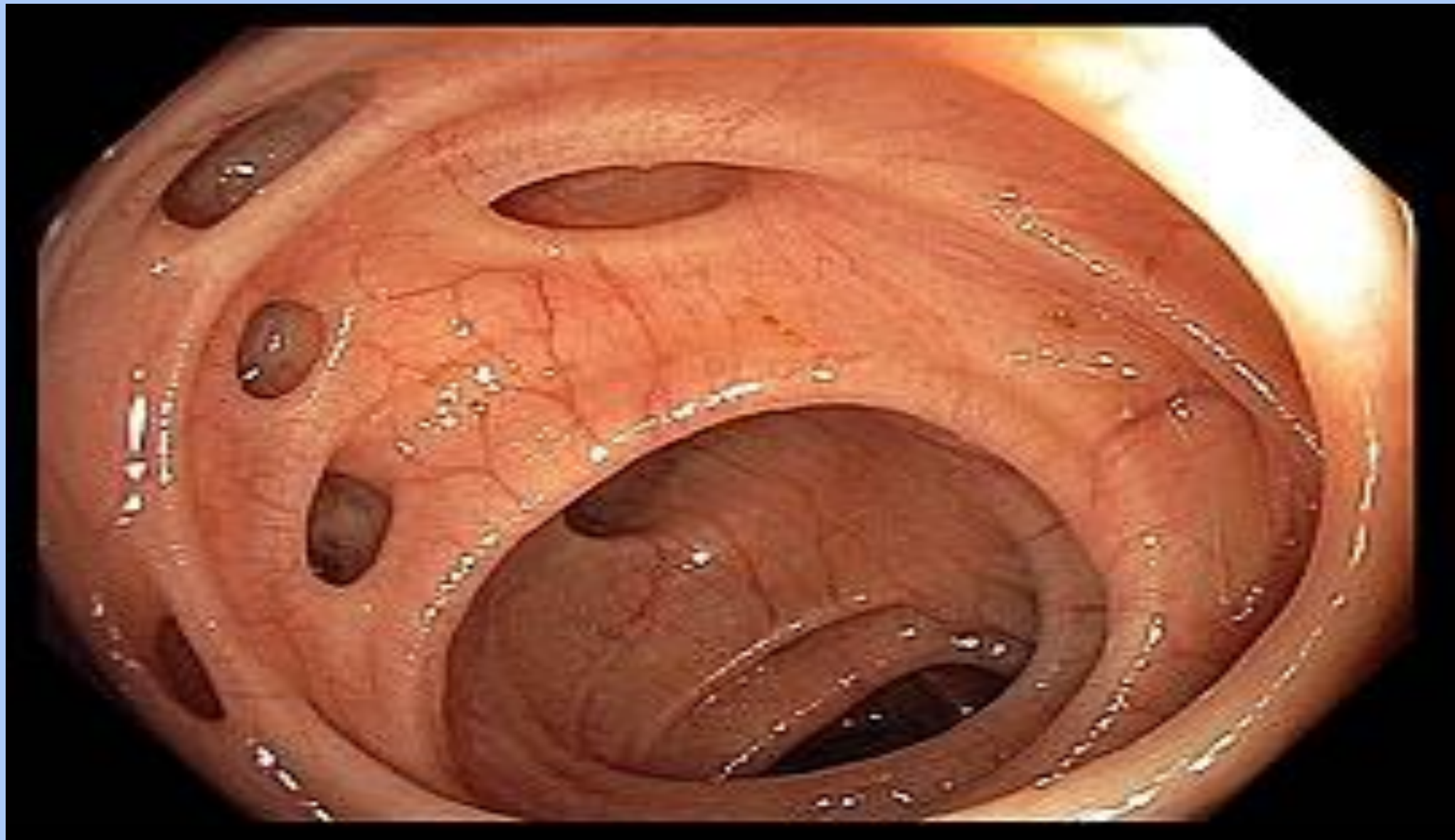
segmental colitis associated with diverticula,

symptomatic uncomplicated diverticular disease.

## Diverticulosis of colon on BE and CT colonography



A single contrast barium enema (A) shows diverticulosis of the ascending colon (arrowheads) and descending colon (double arrow). Source images for a virtual colonoscopy reconstructed in the coronal plane show diverticula in the ascending colon (arrowhead) and extensive diverticulosis of the descending colon (double arrow).



## DIVERTICULOSIS(cont...)

### RISK FACTORS

- ✓ Low fiber, high fat, and red meat
- ✓ Seeds and nuts
- ✓ Physical inactivity
- ✓ Obesity
- ✓ Current smokers
- ✓ Nonsteroidal antiinflammatory drugs, steroids, and opiates
- ✓ Statins may be associated with a **decreased** risk of diverticular perforation
- ✓ Higher levels of vitamin D have been associated with a reduced risk of hospitalization for diverticulitis

## DIVERTICULOSIS(cont...)

The **prevalence** of diverticulosis is age-dependent, increasing from less than 20 percent at age 40 to 60 percent by age 60 .

The distribution of diverticulosis within the colon varies by geography

Depending upon the method of diagnosis and age of the population

The distribution of diverticula may also vary by race

## DIVERTICULOSIS(cont...)

- ❖ Approximately 95 percent of patients with diverticula have sigmoid diverticula.
- ❖ Diverticula are limited to the sigmoid colon in 65 percent of patients;
- ❖ In 24 percent of patients diverticula predominantly involve the sigmoid, but are also present in other parts of the colon.



## DIVERTICULOSIS(cont...)

- ❖ In 7 percent of patients diverticula are equally distributed throughout the colon;
- ❖ In 4 percent diverticula are limited to a segment proximal to the sigmoid colon.
- ❖ While most diverticula in both blacks and whites were located in the sigmoid colon, the distribution of the diverticula in the ascending colon or hepatic flexure was higher in blacks as compared with whites (20 versus 8 percent).
- ❖
- ❖ **In Asia**, the prevalence of diverticulosis is between 13 and 25 percent, **and diverticulosis is predominantly right-sided**

## DIVERTICULOSIS(cont...)

- ❑ Diverticular **bleeding** is characterized by painless hematochezia due to segmental weakness of the vasa recta associated with a diverticulum.
- ❑ **Diverticulitis** is defined as inflammation of a diverticulum. Diverticulitis may be **acute or chronic**, uncomplicated or complicated by a diverticular abscess, fistula, bowel obstruction, or free perforation.

## DIVERTICULOSIS(cont...)

- **Segmental colitis associated with diverticula (SCAD)** or diverticular colitis is characterized by inflammation in the interdiverticular mucosa **without involvement of the diverticular orifices.**

The pathogenesis of segmental colitis associated with diverticula (SCAD) or diverticular colitis is incompletely understood. The cause may be multifactorial, related to mucosal prolapse, fecal stasis, or localized ischemia

## DIVERTICULOSIS(cont...)

**Symptomatic uncomplicated diverticular disease (SUDD)** is characterized by persistent abdominal pain attributed to diverticula in the absence of macroscopically overt colitis or diverticulitis. This has also been described as **smouldering diverticulitis**, especially when wall thickening is present in the absence of inflammatory changes on computed tomography.

Altered colonic motility may be one of the underlying causes of abdominal pain and constipation.

## DIVERTICULOSIS(cont...)

Alterations in the gut microbiome, chronic inflammation, and visceral hypersensitivity have been implicated in the pathogenesis of SCAD and SUDD.

In patients with symptomatic uncomplicated diverticular disease patients with diverticulosis were demonstrated to have a significantly reduced density of interstitial cells of Cajal as compared with controls

# COLORECTAL CANCER (CRC)

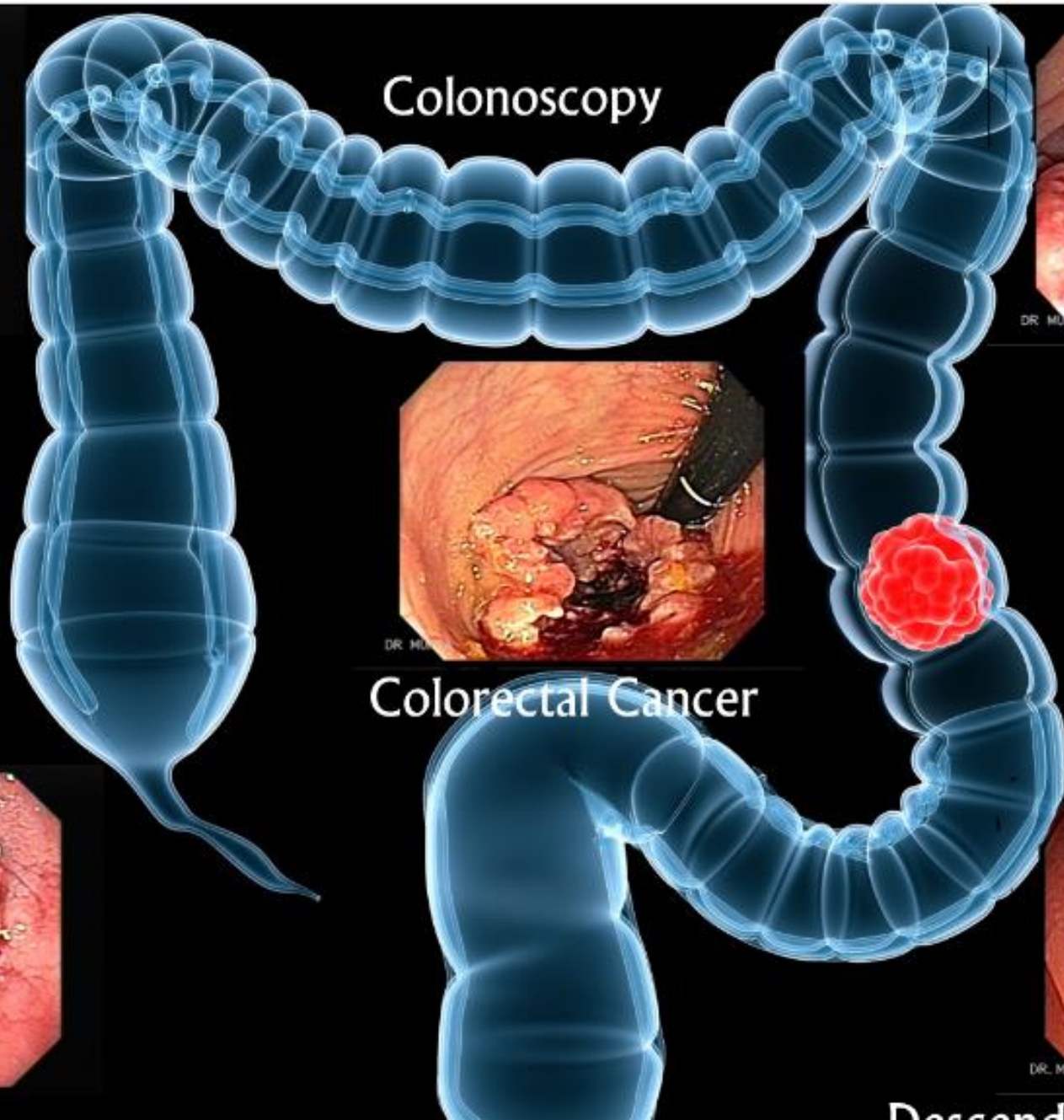
Colorectal cancer (CRC) is a common and lethal disease

Although CRC mortality has been progressively declining since 1990 at a rate of approximately 2.5 to 3 percent per year

It still remains the third most common cause of cancer death in the United States in women, and the second leading cause of death in men



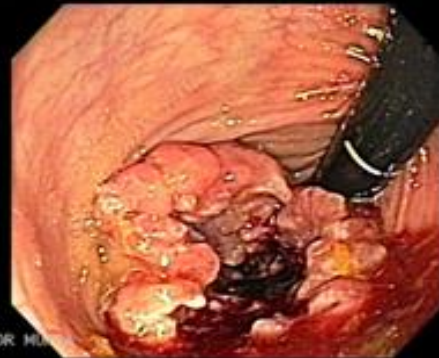
Normal Colon



Colonoscopy



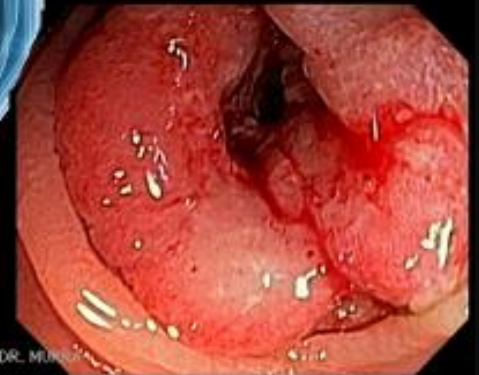
Rectal Cancer



Colorectal Cancer



Rectal Cancer



Descending Colon Cancer

## CRC(cont...)

In contrast to these declines, the incidence of CRC in men and women **under the age of 50** has been **steadily increasing** at a rate of 2.1 percent per year from 1992 through 2012.

At present, **screening is not recommended** for individuals under the age of 50 unless they have inflammatory bowel disease, a history of abdominal radiation, a positive family history, or a predisposing inherited syndrome



## CRC(cont...)

Patients with colorectal cancer (CRC) may *present* in three ways:

- Suspicious symptoms and/or signs
- Asymptomatic individuals discovered by routine screening
- Emergency admission with intestinal obstruction, peritonitis, or rarely, an acute gastrointestinal (GI) bleeding.

There are **no symptoms** in the **majority of patients** with early stage colon cancer and these patients are diagnosed as a result of screening.

CRC(cont...)

**Typical symptoms/signs** associated with CRC include hematochezia or melena, **abdominal pain**, otherwise unexplained iron deficiency anemia, and/or a change in bowel habits.

Less common presenting symptoms include abdominal distention, and/or nausea and vomiting, which may be indicators of obstruction.

## CRC(cont...)

Among symptomatic patients, **clinical manifestations** also differ depending on tumor location:

A change in bowel habits is a more common presenting symptom for left-sided than right-sided CRCs.

Fecal contents are liquid in the proximal colon and the lumen caliber is larger, and CRCs are therefore less likely to be associated with obstructive symptoms, including colicky pain.

CRC(cont...)

**Hematochezia** is more often caused by rectosigmoid than right-sided colon cancer.

**Iron deficiency** anemia from unrecognized blood loss is more common with right-sided CRCs . Cecal and ascending colon tumors have a fourfold higher mean daily blood loss (approximately 9 mL/day) than tumors at other colonic

**Abdominal pain** can occur with tumors arising at **all sites**; it can be caused by a partial obstruction, peritoneal dissemination, or intestinal perforation leading to generalized peritonitis.

**Rectal cancer** can cause tenesmus, rectal pain, and diminished caliber of stools.

## CRC(cont...)

- Patients may also present with signs/symptoms of **metastatic** disease.
- CRC can spread by lymphatic and hematogenous dissemination, as well as by contiguous and transperitoneal routes.
- The most common metastatic sites are the regional lymph nodes, liver, lungs, and peritoneum.
- Patients may present with signs or symptoms referable to any of these areas. The presence of right upper quadrant pain, abdominal distention, early satiety, supraclavicular adenopathy, or periumbilical nodules usually signals advanced, often metastatic disease.

## CRC(cont...)

- Local invasion or a contained perforation causing malignant fistula formation into adjacent organs, such as bladder (resulting in pneumaturia) or small bowel.
- Fever of unknown origin, intraabdominal, retroperitoneal, abdominal wall or intrahepatic abscesses due to a localized perforated colon cancer .
- Streptococcus bovis bacteremia and Clostridium septicum sepsis are associated with underlying colonic malignancies in approximately 10 to 25 percent of patients

# CELIAC DISEASE

## Classic disease

The *classic definition* of celiac disease or gluten-sensitive enteropathy includes the following three features:

- ❑ villous atrophy
- ❑ symptoms of malabsorption such as steatorrhea, weight loss,
- ❑ other signs of nutrient or vitamin deficiency

Resolution of the mucosal **lesions** and **symptoms** upon withdrawal of gluten-containing foods, usually within a few weeks to months

## CELIAC DX (cont...)

### **Atypical celiac disease**

Patients with atypical disease exhibit only minor gastrointestinal complaints. They can display

anemia

dental enamel defects

Osteoporosis

Arthritis

increased transaminases

neurological symptoms

infertility



## Nongastrointestinal nonmalignant symptoms of celiac disease

Infertility
Rheumatic disorders
Vitamin D and calcium deficiency
Osteomalacia
Osteoporosis
Neurologic disorders
Depression - 10.6%
Epilepsy - 3.5%
Migraine headaches - 3.2%
Anxiety - 2.6%
Suicidal tendency - 2.1%
Carpal tunnel syndrome - 1.8%
Myopathy - 1.5%

Data from: Holmes JKT. Non-malignant complications of coeliac disease. *Acta Paediatr* 1996; 412(Suppl):68.

CELIAC DX(cont...)

## **Asymptomatic (silent) celiac disease**

Patients are often recognized incidentally based upon screenings for antibodies against gliadin or tissue transglutaminase

## CELIAC DX(cont...)

### **Latent celiac disease**

There are some patients who have normal jejunal mucosa and minor symptoms or no symptoms at one or more time points while on a normal, gluten-containing diet.

- ✓ Celiac disease was present before, usually in childhood; the patient recovered completely with a gluten-free diet, remaining "silent" even when a normal diet was reintroduced.
- ✓ A normal mucosa was diagnosed at an earlier occasion while ingesting a normal diet, but celiac disease developed later.

## CELIAC DX(cont...)

### **Menstrual and reproductive issues**

Women with untreated celiac disease may have

- ❖ later menarche
- ❖ earlier menopause
- ❖ secondary amenorrhea
- ❖ recurrent miscarriage
- ❖ Infertility
- ❖ preterm delivery
- ❖ low birth weight



THANK

YOU