INFLAMMATORY BOWEL DISEASE

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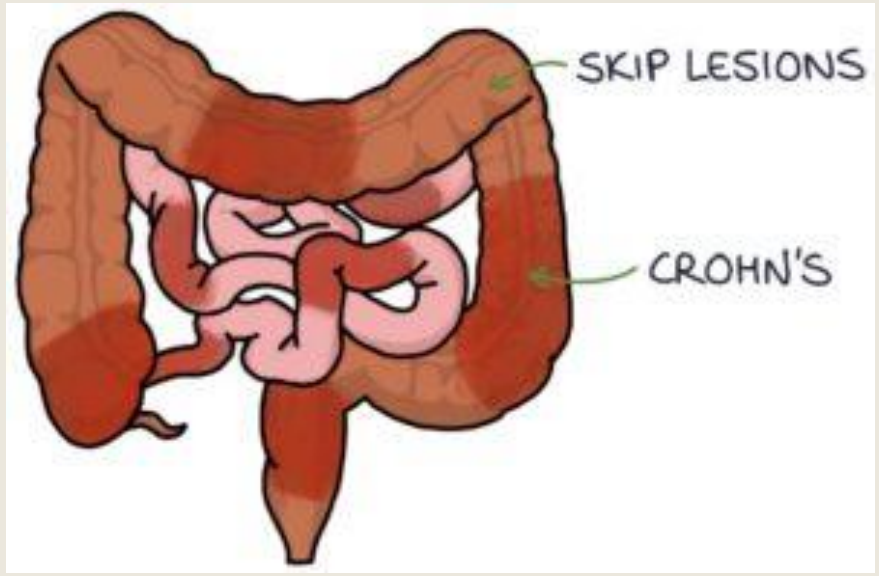
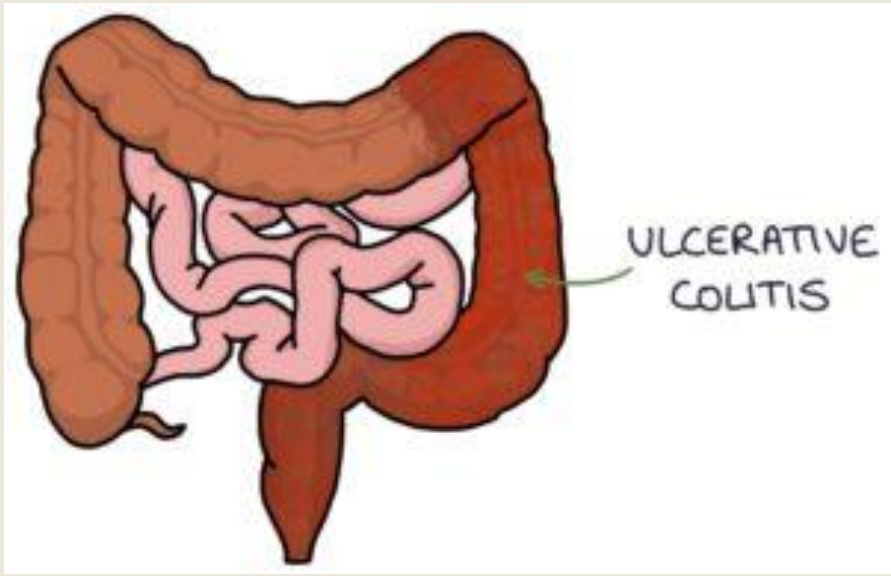
Structure

- What is IBD and IBS?
- Ulcerative Colitis
- Crohn’s
- Coeliac disease
- SBAs

What is IBD?

- ***Inflammatory bowel disease*** is the umbrella term for two main diseases causing inflammation of the GI tract: ***Ulcerative Colitis*** and ***Crohn's disease***. They both involve inflammation of the walls of the GI tract and are associated with periods of remission and exacerbation.





IBS

Irritable bowel syndrome is a "***functional bowel disorder***".

Criteria for Diagnosis (NICE Guidelines)

- ***Other pathology should be excluded:***
- *Normal FBC, ESR and CRP blood tests*
- ***Faecal calprotectin*** *negative to exclude inflammatory bowel disease*
- *Negative coeliac disease serology (**anti-TTG antibodies**)*
- *Cancer is not suspected or excluded if suspected*

Symptoms should suggest IBS:
Abdominal pain / discomfort:
Relieved on opening bowels, or
Associated with a change in bowel habit
AND 2 of:
Abnormal stool passage
Bloating
Worse symptoms after eating
PR mucus

IBS Management

- **General healthy diet and exercise advice:**
- Adequate fluid intake
- Regular small meals
- Reduced processed foods
- Limit caffeine and alcohol
- Low "***FODMAP***" diet (ideally with dietician guidance)
- Trial of ***probiotic*** supplements for 4 weeks

First Line Medication:

- ***Loperamide*** for diarrhoea
- Laxatives for constipation. Avoid ***lactulose*** as it can cause bloating. ***Linaclotide*** is a specialist laxative for patients with IBS not responding to first-line laxatives
- Antispasmodics for cramps e.g. ***hyoscine butylbromide*** (***Buscopan***)

Second Line Medication:

- Tricyclic antidepressants (i.e. ***amitriptyline*** 5-10mg at night)

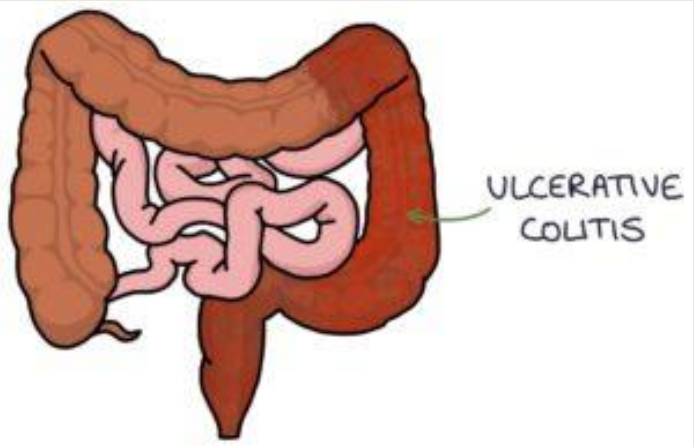
Third Line Medication:

- SSRIs antidepressants

Ulcerative Colitis

Inflammation always starts at rectum (hence it is the most common site for UC), never spreads beyond ileocaecal valve and is continuous.

The peak incidence of ulcerative colitis is in people aged 15-25 years and in those aged 55-65 years.



Presentation

- bloody diarrhoea
- urgency
- tenesmus
- abdominal pain, particularly in the left lower quadrant
- extra-intestinal features (see below)

Extraintestinal

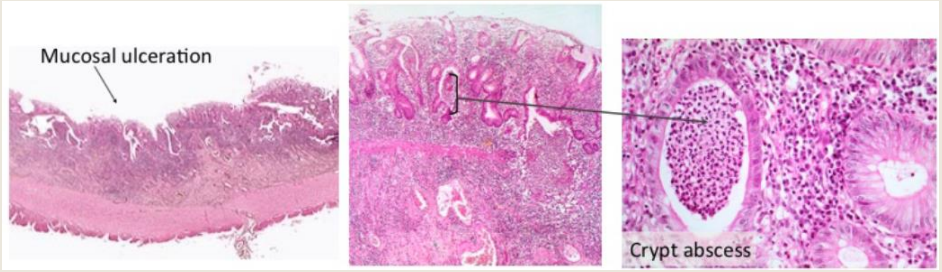
- Uveitis
- Migratory Polyarthritis
- Ankylosing spondylitis
- Pyoderma gangrenosum
- Erythema nodosum
- 5% of patients also have primary sclerosing cholangitis
- Cholangiocarcinoma

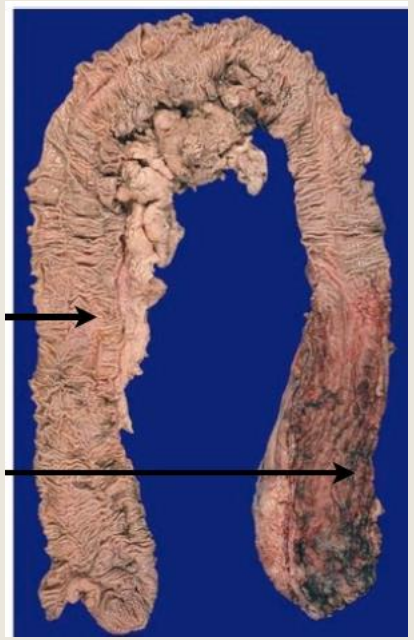
UC Flare up

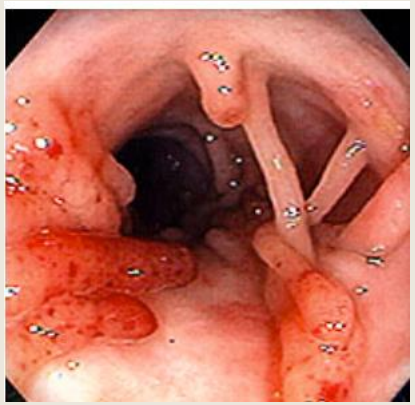
Feature	Mild	Moderate	Severe
Motions per day	<4	4-6	>6
Rectal bleeding	little	moderate	large amounts
Temperature	apyrexial	intermediate	>37.8ºc
Heart rate (BPM)	<70	70-90	>90
Hb	>11	10.5-11	<10.5
ESR	normal	intermediate	>30

Pathology

- red, raw mucosa, bleeds easily
- no inflammation beyond submucosa (unless fulminant disease)
- widespread ulceration with preservation of adjacent mucosa which has the appearance of polyps ('pseudopolyps')
- inflammatory cell infiltrate in lamina propria
- neutrophils migrate through the walls of glands to form crypt abscesses
- depletion of goblet cells and mucin from gland epithelium
- granulomas are infrequent (more common in crohn’s)







Investigations

- Routine bloods for anaemia, infection, thyroid, kidney and liver function
- CRP indicates inflammation and active disease, ESR >30mm/hr – severe flare up.
- ***Faecal calprotectin*** (released by the intestines when inflamed) is a useful screening test (> 90% sensitive and specific to IBD in adults)
- **Endoscopy (OGD and colonoscopy) with biopsy is diagnostic**
- Imaging with ultrasound, CT and MRI can be used to look for complications such as fistulas, abscesses and strictures.

Management

Inducing remission : mild-to-moderate ulcerative colitis

proctitis

- topical (rectal) aminosalicylate: for distal colitis rectal mesalazine has been shown to be superior to rectal steroids and oral aminosalicylates
- if remission is not achieved within 4 weeks, add an oral aminosalicylate
- if remission still not achieved add topical or oral corticosteroid

proctosigmoiditis and left-sided ulcerative colitis

- topical (rectal) aminosalicylate
- if remission is not achieved within 4 weeks, add a high-dose oral aminosalicylate OR switch to a high-dose oral aminosalicylate and a topical corticosteroid
- if remission still not achieved stop topical treatments and offer an oral aminosalicylate and an oral corticosteroid

extensive disease

- topical (rectal) aminosalicylate and a high-dose oral aminosalicylate:
- if remission is not achieved within 4 weeks, stop topical treatments and offer a high-dose oral aminosalicylate and an oral corticosteroid

Management Cont.

Managing remission: Severe colitis

should be treated in hospital

- intravenous steroids are usually given first-line
  - intravenous ciclosporin may be used if steroid are contraindicated
- if after 72 hours there has been no improvement, consider adding intravenous ciclosporin to intravenous corticosteroids or consider surgery

Maintaining remission

Following a mild-to-moderate ulcerative colitis flare

proctitis and proctosigmoiditis

- topical (rectal) aminosalicylate alone (daily or intermittent) or
- an oral aminosalicylate plus a topical (rectal) aminosalicylate (daily or intermittent) or
- an oral aminosalicylate by itself: this may not be effective as the other two options

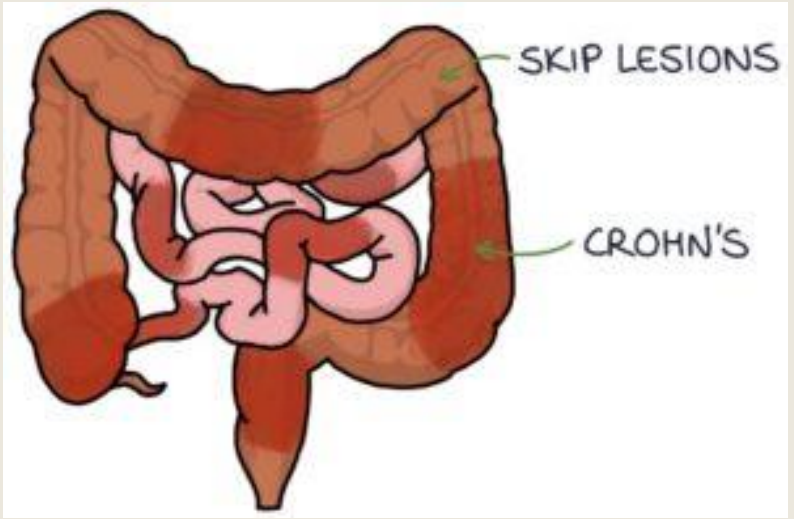
- left-sided and extensive ulcerative colitis
  - low maintenance dose of an oral aminosalicylate

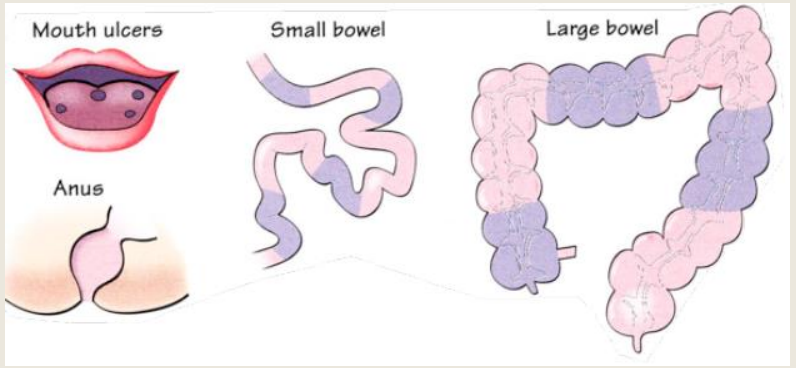
Following a severe relapse or >=2 exacerbations in the past year

- Oral azathioprine or oral mercaptopurine

Crohn’s Disease

- Crohn's disease is a form of inflammatory bowel disease.
- It commonly affects the terminal ileum and colon but may be seen anywhere from the mouth to anus.
  - *Terminal ileum and proximal colon*
- Patchy and discontinuous distribution
- Crohn's disease typically presents in late adolescence or early adulthood.



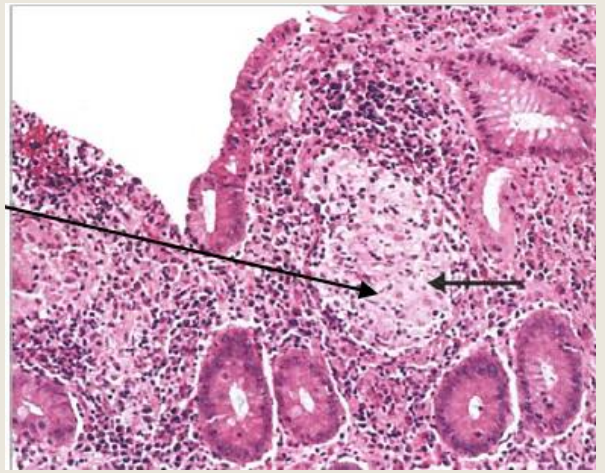


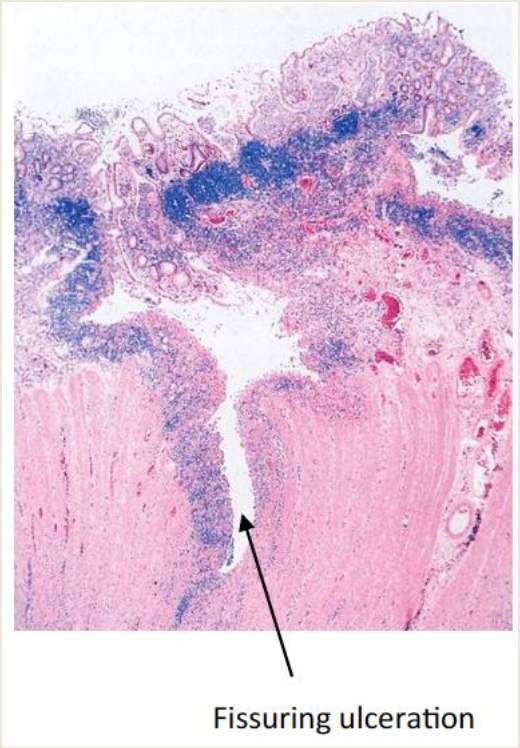
Presentation

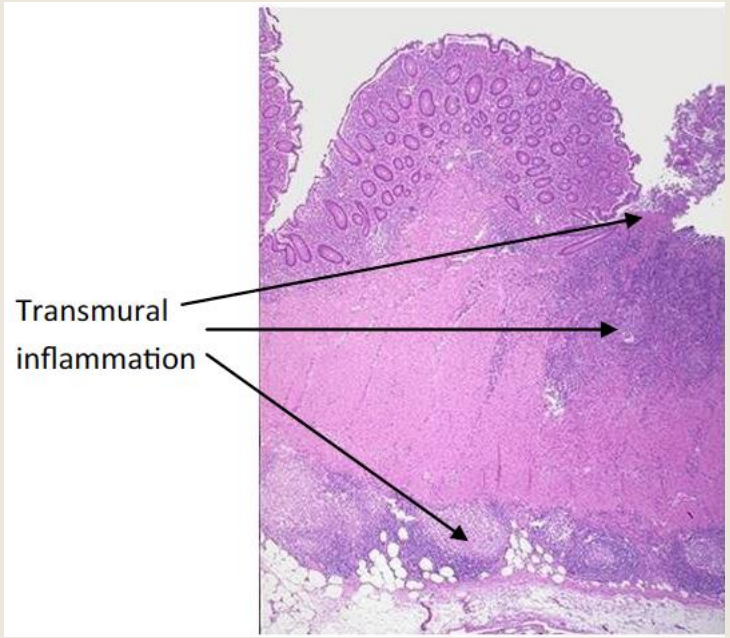
- may be non-specific symptoms such as weight loss and lethargy
- diarrhoea: the most prominent symptom in adults.
  - *Crohn's colitis may cause bloody diarrhoea*
- abdominal pain: the most prominent symptom in children
- perianal disease: e.g. Skin tags or ulcers
- extra-intestinal features are more common in patients with colitis or perianal disease
- Extra-intestinal manifestations of Crohn’s disease overlap with those of UC and include:
  - *uveitis,*
  - *migratory polyarthritis,*
  - *sacroiliitis,*
  - *ankylosing spondylitis*
  - *skin lesions (pyoderma gangrenosum, erythema nodosum).*

Pathology

- cause is unknown but there is a strong genetic susceptibility
- inflammation occurs in all layers, down to the serosa. This is why patients with Crohn's are prone to strictures, fistulas and adhesions
- deep fissuring ulcers, often in the form of penetrating knife-like clefts through the bowel wall.
- transmural inflammation (ie. all the layers of the bowel wall may be involved)
- non-caseating granulomas

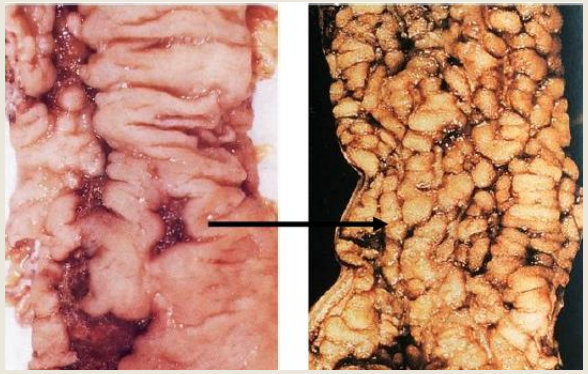


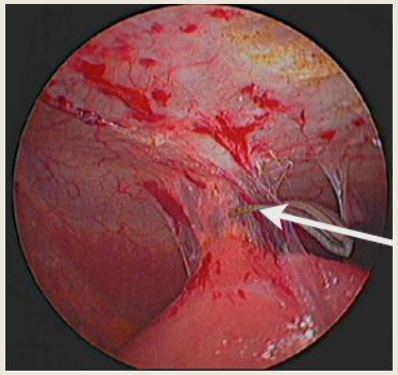


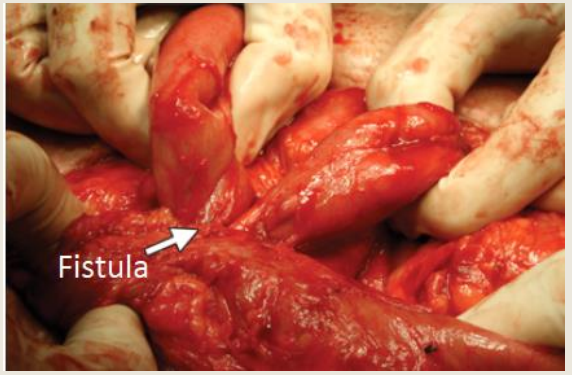


Pathology Cont.

- The linear fissuring ulcers may coalesce, resulting in the formation of a ‘cobblestone’ appearance.
- The cobblestones correspond to areas of surviving mucosa surrounded by fissuring ulceration.
- Transmural inflammation = The inflammation may extend to the serosal surface and cause:
- adhesions to other loops of bowel and intra-abdominal organs.
- fistula formation: enteroenteric (bowel to bowel), enterovaginal (bowel to vagina), enterocutaneous (bowel to skin), enterovesical (bowel to bladder).
- The transmural inflammation heals by fibrosis which may result in stricture formation and present as bowel obstruction.







Investigations

Bloods

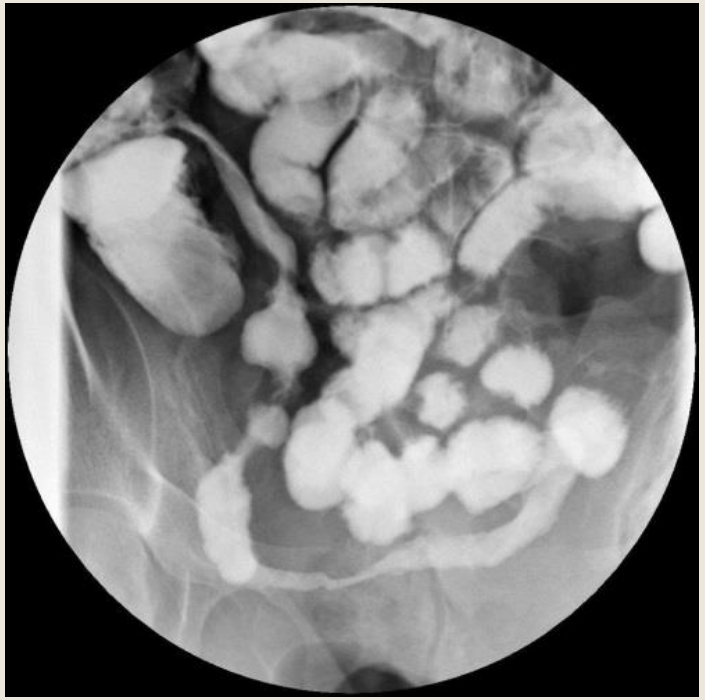
- C-reactive protein correlates well with disease activity

Endoscopy: Colonoscopy is the investigation of choice

- deep ulcers, skip lesions
- Histology inflammation in all layers from mucosa to serosa
- goblet cells
- Granulomas

Small bowel enema: high sensitivity and specificity for examination of the terminal ileum

- strictures: 'Kantor's string sign'
- proximal bowel dilation
- 'rose thorn' ulcers
- fistulae



Management

Inducing remission

- **glucocorticoids** (oral, topical or intravenous) are generally used to induce remission. Budesonide is an alternative in a subgroup of patients
- **enteral feeding** with an elemental diet may be used in addition to or instead of other measures to induce remission, particularly if there is concern regarding the side-effects of steroids (for example in young children)
- **5-ASA drugs (e.g. mesalazine)** are used second-line to glucocorticoids but are not as effective
- azathioprine or mercaptopurine* may be used as an add-on medication to induce remission but is not used as monotherapy. Methotrexate is an alternative to azathioprine
- infliximab is useful in refractory disease and fistulating Crohn's. Patients typically continue on azathioprine or methotrexate
- metronidazole is often used for isolated peri-anal disease

Maintaining remission: as above, stopping smoking is a priority (remember: smoking makes Crohn's worse, but may help ulcerative colitis)

- **azathioprine or mercaptopurine** is used first-line to maintain remission
- methotrexate is used second-line
- 5-ASA drugs (e.g. mesalazine) should be considered if a patient has had previous surgery
- **Surgery**: around 80% of patients with Crohn's disease will eventually have surgery

Surgery

The most common complication is stricturing terminal ileal disease and this often culminates in an **ileocaecal resection.**

Other procedures performed include:

- segmental small bowel resections
- stricturoplasty.
- sub total colectomy,
- panproctocolectomy
- staged sub total colectomy and proctectomy.

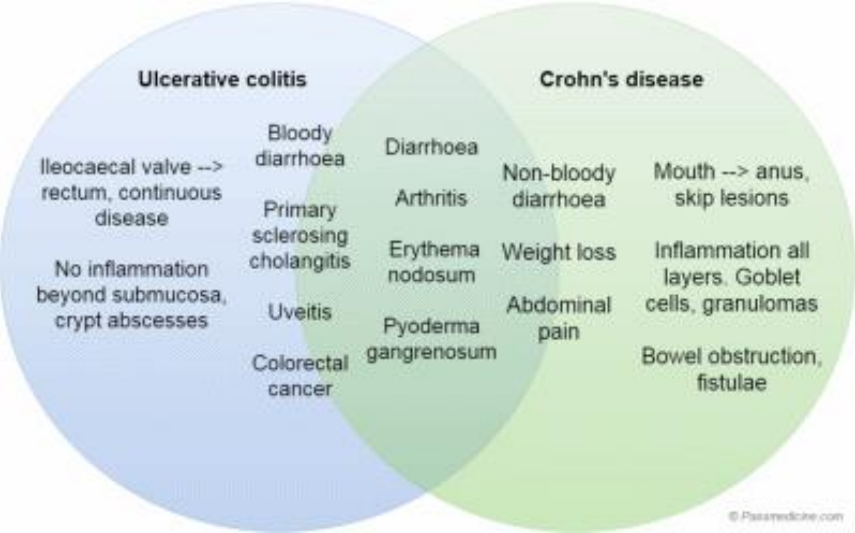
Fistulation between loops of bowel may also occur and result in bacterial overgrowth and malabsorption. Management of enterocutaneous fistulae involves controlling sepsis, optimising nutrition, imaging the disease and planning definitive surgical management.

Complications of Crohn's disease

As well as the well-documented complications described above, patients are also at risk of:

- small bowel cancer (standard incidence ratio = 40)
- colorectal cancer (standard incidence ration = 2, i.e. less than the risk associated with ulcerative colitis)
- osteoporosis

Chron’s Vs UC



Crohn’s (crows NESTS)

- N – No blood or mucus (less common)
- E – Entire GI tract
- S – “Skip lesions” on endoscopy
- T – Terminal ileum most affected and Transmural (full thickness) inflammation
- S – Smoking is a risk factor (don’t set the nest on fire)
- Crohn’s is also associated with weight loss, strictures and fistulas.

Ulcerative Colitis (remember U – C – CLOSEUP)

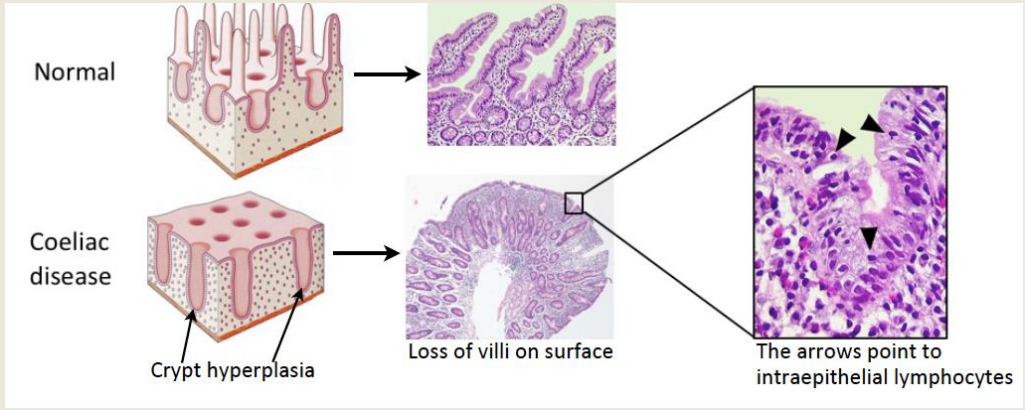
- C – Continuous inflammation
- L – Limited to colon and rectum
- O – Only superficial mucosa affected
- S – Smoking is protective
- E – Excrete blood and mucus
- U – Use *aminosalicylates*
- P – Primary Sclerosing Cholangitis

Coeliac Disease

- Coeliac disease is an autoimmune condition caused by sensitivity to the protein gluten (in particular, gliadin, the alcohol-free fraction of gluten).
- Gluten is found in wheat, barley and rye.
- Conditions associated with coeliac disease include:
  - *dermatitis herpetiformis (a vesicular, pruritic skin eruption)*
  - *autoimmune disorders (type 1 diabetes mellitus and autoimmune hepatitis).*
  - *It is strongly associated with HLA-DQ2 (95% of patients) and HLA-DQ8 (80%).*
- It is thought to affect around 1% of the UK population.

Pathology

- The pathogenesis of coeliac disease is not fully understood: it is thought that gliadin triggers inappropriate activation of intestinal T cells in genetically susceptible individuals (people with HLA-DQ2 and HLA-DQ8 haplotypes), resulting in **damage to intestinal epithelial cells.**
- The cytotoxic T cells migrate into the intestinal epithelium which is visible on biopsy as intraepithelial lymphocytes [intraepithelial = within the epithelium].
- The T cells damage and destroy epithelial cells resulting in progressive villous atrophy.
- As a result, the crypts become hyperplastic to compensate for the cell loss.
- Repeated exposure leads to villous atrophy which in turn causes malabsorption.
- Humoral immune system also produces anti-TTG antibodies against gliadin.



The damage to the small bowel mucosa is visible in a duodenal biopsy

Presentation

Signs and symptoms	Conditions
•Chronic or intermittent diarrhoea •Failure to thrive or faltering growth (in children) •Persistent or unexplained gastrointestinal symptoms including nausea and vomiting •Prolonged fatigue ('tired all the time') •Recurrent abdominal pain, cramping or distension •Sudden or unexpected weight loss •Unexplained iron-deficiency anaemia, or other unspecified anaemia	•Autoimmune thyroid disease •Dermatitis herpetiformis •Irritable bowel syndrome •Type 1 diabetes •First-degree relatives (parents, siblings or children) with coeliac disease

Investigations

Diagnosis is made by a combination of immunology and jejunal biopsy. Villous atrophy and immunology normally reverses on a gluten-free diet.

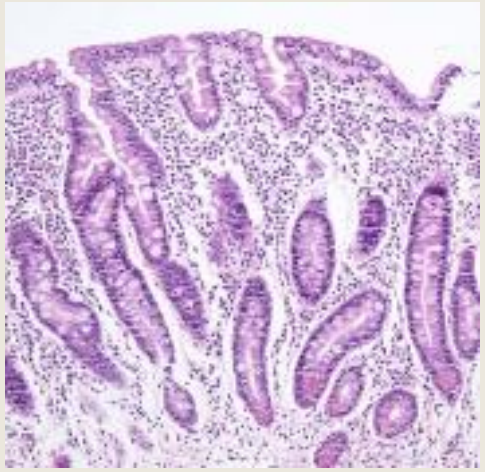
NICE issued guidelines on the investigation of coeliac disease in 2009. If patients are already taking a gluten-free diet they should be asked, if possible, to reintroduce gluten for at least 6 weeks prior to testing.

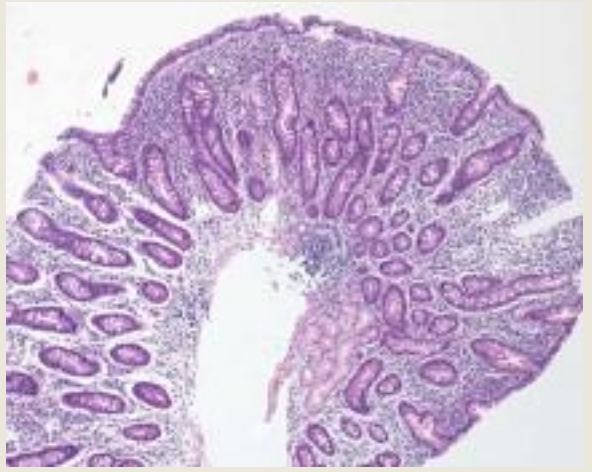
Immunology

- tissue transglutaminase (TTG) antibodies (IgA) are first-choice according to NICE endomyseal antibody (IgA)
  - needed to look for selective IgA deficiency, which would give a false negative coeliac result

Duodenal/jejunal biopsy

- villous atrophy
- crypt hyperplasia
- increase in intraepithelial lymphocytes
- lamina propria infiltration with lymphocytes





Management

The management of coeliac disease involves a **gluten-free diet.** Gluten-containing cereals include: wheat: bread, pasta, pastry

- barley
- Rye
- oats
  - some patients with coeliac disease appear able to tolerate oats
- Some notable foods which are gluten-free include:
- rice
- potatoes
- corn (maize)

Tissue transglutaminase antibodies may be checked to check compliance with a gluten-free diet.

Immunisation : Patients with coeliac disease often have a degree of **functional hyposplenism**

- pneumococcal vaccine
  - Coeliac UK recommends that everyone with coeliac disease is vaccinated against pneumococcal infection and has a booster every 5 years
- Currrent guidelines suggest giving the influenza vaccine on an individual basis.

Complications

- Anaemia: iron, folate and vitamin B12 deficiency (folate deficiency is more common than vitamin B12 deficiency in coeliac disease)
- Hyposplenism – pneumococcal (and flu) vaccinations recommended
- osteoporosis, osteomalacia
- lactose intolerance
- enteropathy-associated T-cell lymphoma of small intestine
- subfertility, unfavourable pregnancy outcomes
- rare: oesophageal cancer, other malignancies

SBA 1

An 18-year-old male presents to his general practitioner, complaining of loose stool. When questioned, he is passing around 5 stools a day which is occasionally accompanied with some fresh blood. He is keeping well hydrated and feels systematically well. He also has a past history of ulcerative colitis, which was diagnosed 3 years ago. Examination reveals the patient to be afebrile and harm-dynamically stable, with some abdominal tenderness noted in the left lower quadrant.

What treatment should be used in this patient first-line?

- Oral azathioprine
- Oral methotrexate
- Oral sulfasalazine
- Rectal glucocorticoid
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SBA 2

A 30-year-old woman presents with abdominal pain that is associated with alternating diarrhoea and constipation. Which one of the following symptoms is least consistent with a diagnosis of irritable bowel syndrome?

- Feeling of incomplete stool evacuation
- Waking at night due to the pain
- Abdominal bloating
- Faecal urgency
- Passage of mucous with stool

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SBA 3

A 28-year-old male attends the emergency department after 4 days of watery diarrhoea and fever. He states he has had diarrhoea for the past 6 months but had put it down to the stress of completing a PhD and poor diet. He has lost 10 kilograms in weight. His abdomen is very tender and distended. Bowel sounds are present. A colonoscopy shows diffuse erythema with deep ulcers in a patchy distribution. Samples are taken for pathology. Considering the likely diagnosis what treatment should be initiated immediately ?

- Oral azathioprine
- Rectal prednisolone
- IV hydrocortisone
- 5-aminosalicylate
- Oral budesonide

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SBA 4

A 42-year-old woman presents with fatigue, abdominal distension and weight loss which came on over the last two months. She has had fevers, night sweats and some diarrhoea over the same period. She has no past medical history of note.

On examination, she has bilateral inguinal lymphadenopathy.

A blood test revealed a raised tissue transglutaminase (TTG) antibody.

Which of the following is the most likely diagnosis?

- Reactive lymphadenopathy
- Enteropathy-associated T cell lymphoma
- Sarcoidosis
- Tuberculosis
- MALT lymphoma

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SBA 5

Which one of the following is least associated with Crohn's disease?

- Fistulae
- Kantor's string sign
- 'Cobblestone' pattern of mucosa
- Crypt abscesses
- Involvement of all layers of bowel wall

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FEEDBACK?

THANK YOU!