Oral Manifestations of GIT Diseases

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GIT diseases relevant to the oral cavity

Infections	Autoimmune	Inflammatory
H.pylori	Celiac Disease	Crohn's disease
		Ulcerative Colitis
		OFG

H. pylori

- *Helicobacter pylori*.
- G-ve, micro-aerophilic bacterial rods.
- Considered to be a common flora of the stomach and duodenum.
- Recently linked to gastritis, gastric ulcer and gastric carcinoma.
- Some research suggests a link with oral aphthous ulcers.

H. pylori

- Clinically;
  - Patients complain of pain and burning in the upper abdomen, nausea and sometimes regurgitation.
- Diagnosis is usually by:
  - H. pylori serum antibody.
  - H. pylori antigens in stool.
  - Urea breath test.
  - Gastric biopsy.
- Treatment;
  - Triple therapy:

PPI + Amoxicillin + Clarithromycin

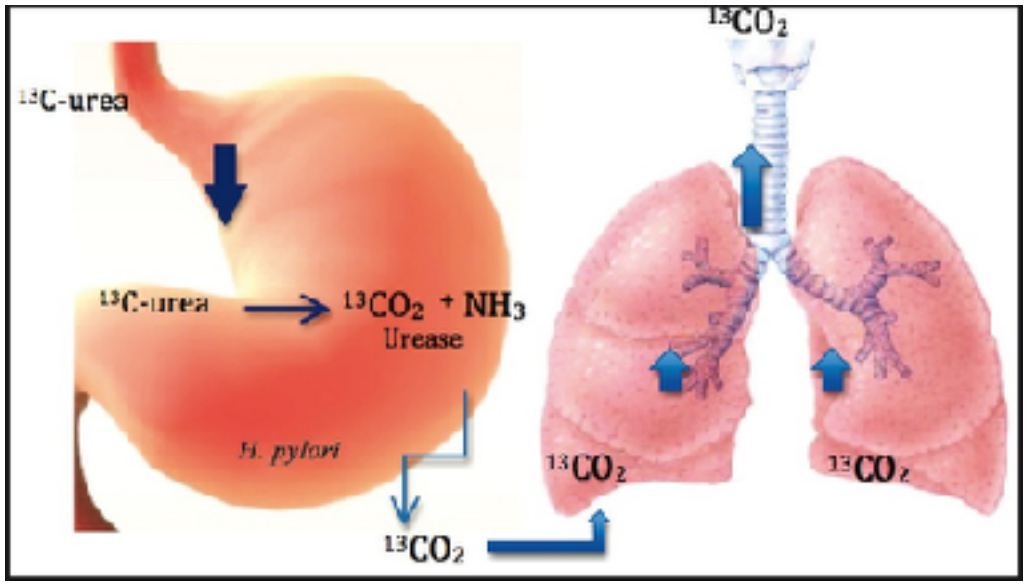
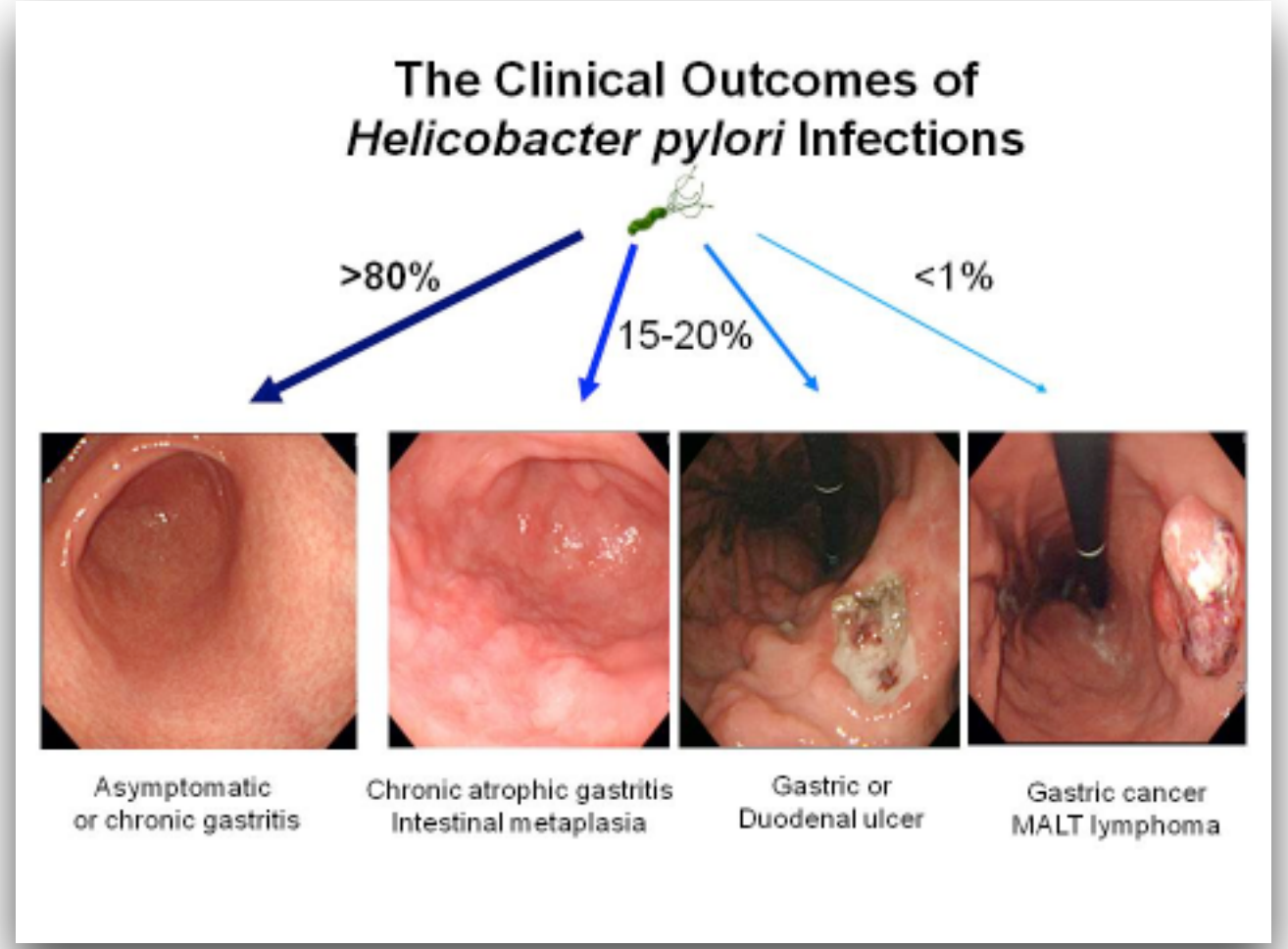


Image source: www.ijmr.org.in

H. pylori



Source: Eun-Hee Kim et al. Cancers 2011

Coeliac disease

- Also called gluten-sensitive enteropathy.
- Non-infectious, immune-mediated inflammatory disease, that occurs in genetically susceptible persons.
- Common in North Europe (1 in every 100). Less frequent in the UK (1 in every 200) and USA (1 in 300).
- Only 10% of those who have auto-Ab are symptomatic.
- The rest are patients with silent disease, or patients with latent disease.
- It is an allergic response to gliadin protein in diet.

Coeliac disease

Web image

- The endosperm of the wheat seed contains;

Gluten

Starch

Gliadin

Glutenin

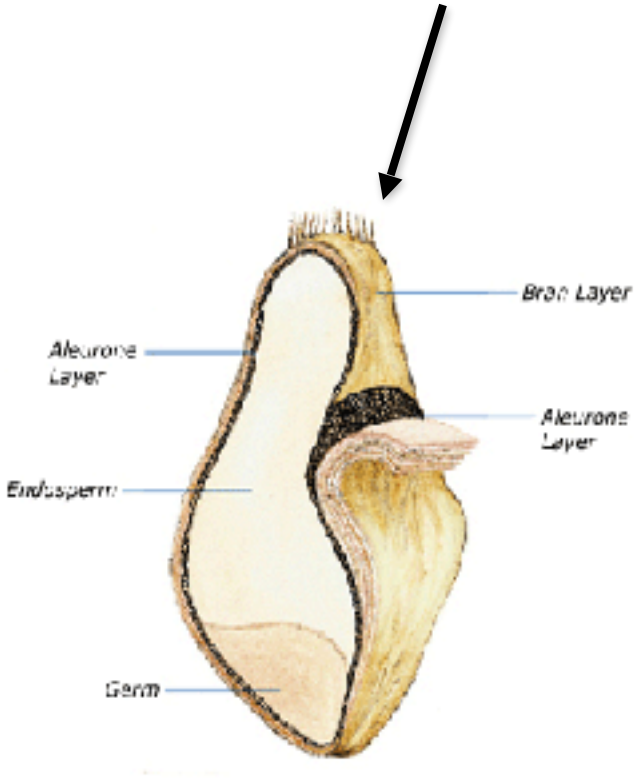


Image source:
www.horizonmilling.ca

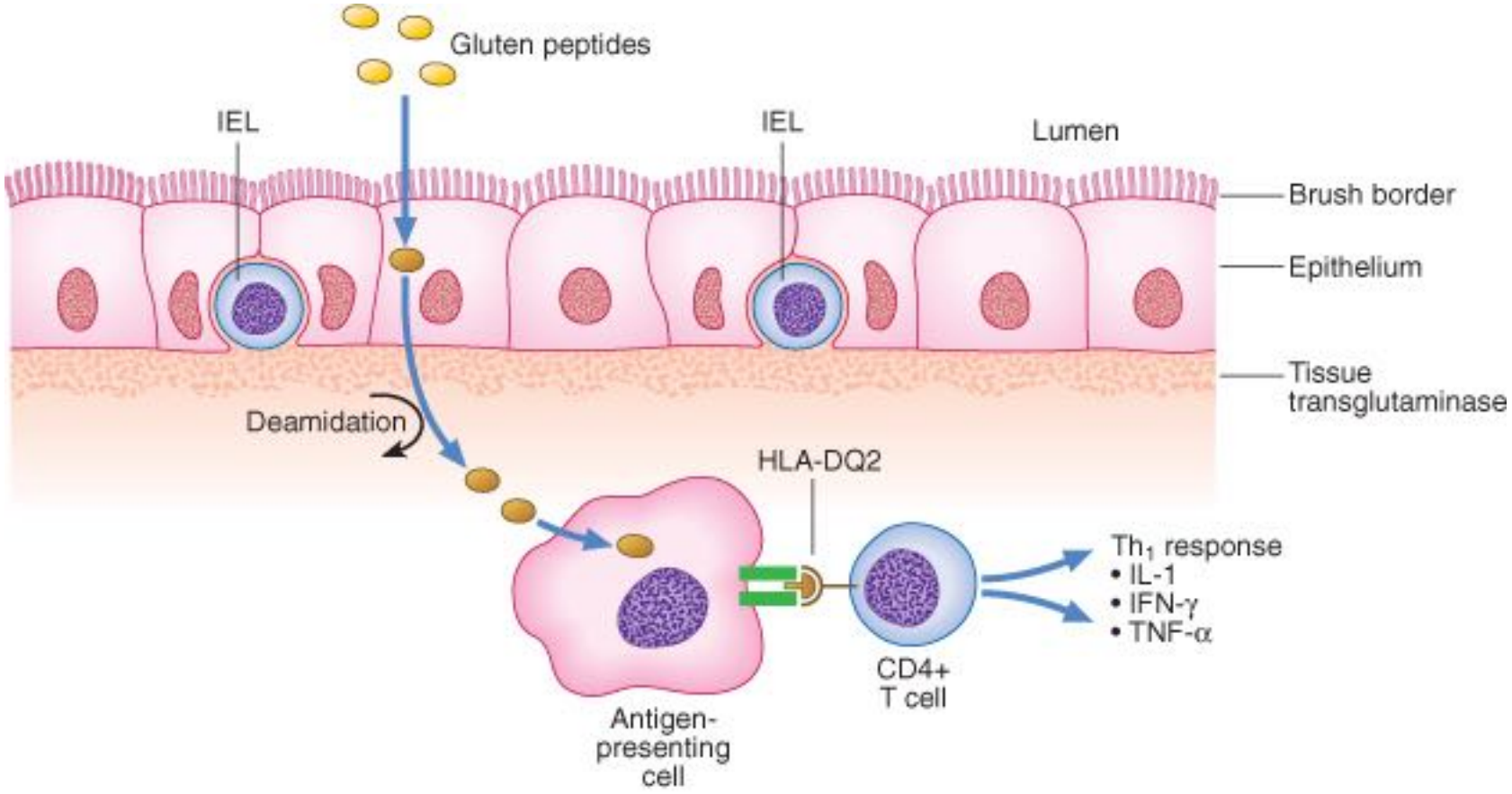
Coeliac disease

- Aetiology;
  - Gluten is digested --> the gliadin peptide is taken up by APC in the mucosal lining of small intestine --> stimulate CD-4 cells.
  - Antigen presentation occurs through HLA-DQ2 (95% of patients) and HLA-DQ8 (5% of patients) -->strong genetic susceptibility.
  - 5-10% of patients have an affected 1st degree relative.

Coeliac disease

- Aetiology;
  - CD-4 cells will stimulate CD-8 cells --> cytotoxicity.
  - CD-4 cells will also stimulate plasma cells --> antibodies (mainly IgA) against tissue transglutaminase.
  - As a result, microvilli will become flattened --> reduced surface area.
  - This occurs mainly in the proximal part of the small intestine.

Coeliac disease



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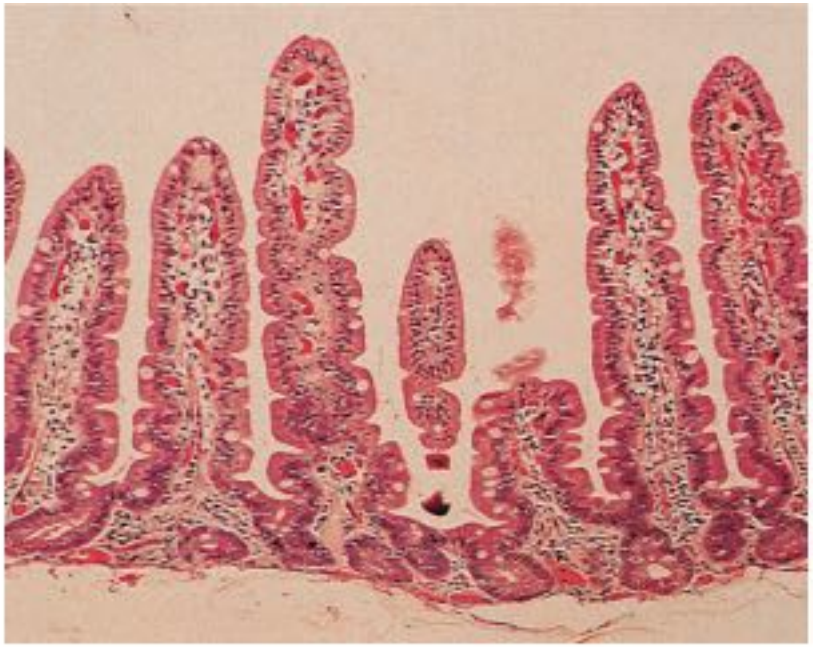

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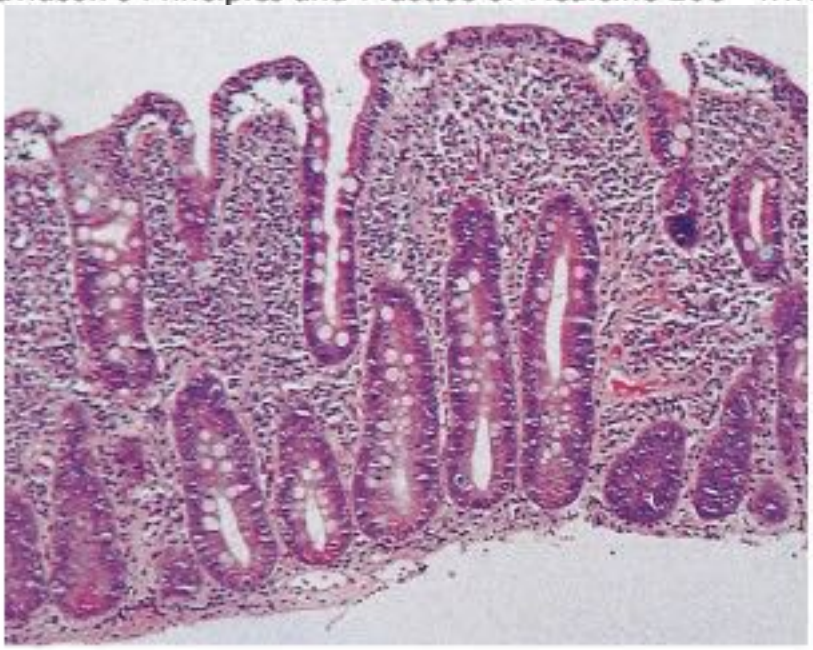


Coeliac disease

- Complications;
  - Mal-absorption, therefore anaemia
  - Delayed growth and maturation (in infants and children)
  - 2x increased risk of lymphoma
  - Dermatitis herpetiformis
- On average, coeliac disease is diagnosed 10 years late.

Coeliac disease

- Clinically;
  - Diarrhoea
  - Loss of apatite
  - Stool is greasy, bulky, frothy, yellow
  - Abd distention

Mal-absorption

- Weakness
- Muscle wasting
- Delayed growth (*including dental formation*)
- Glossitis
- Angular cheilitis
- Oral ulcers

Anaemia

Coeliac disease

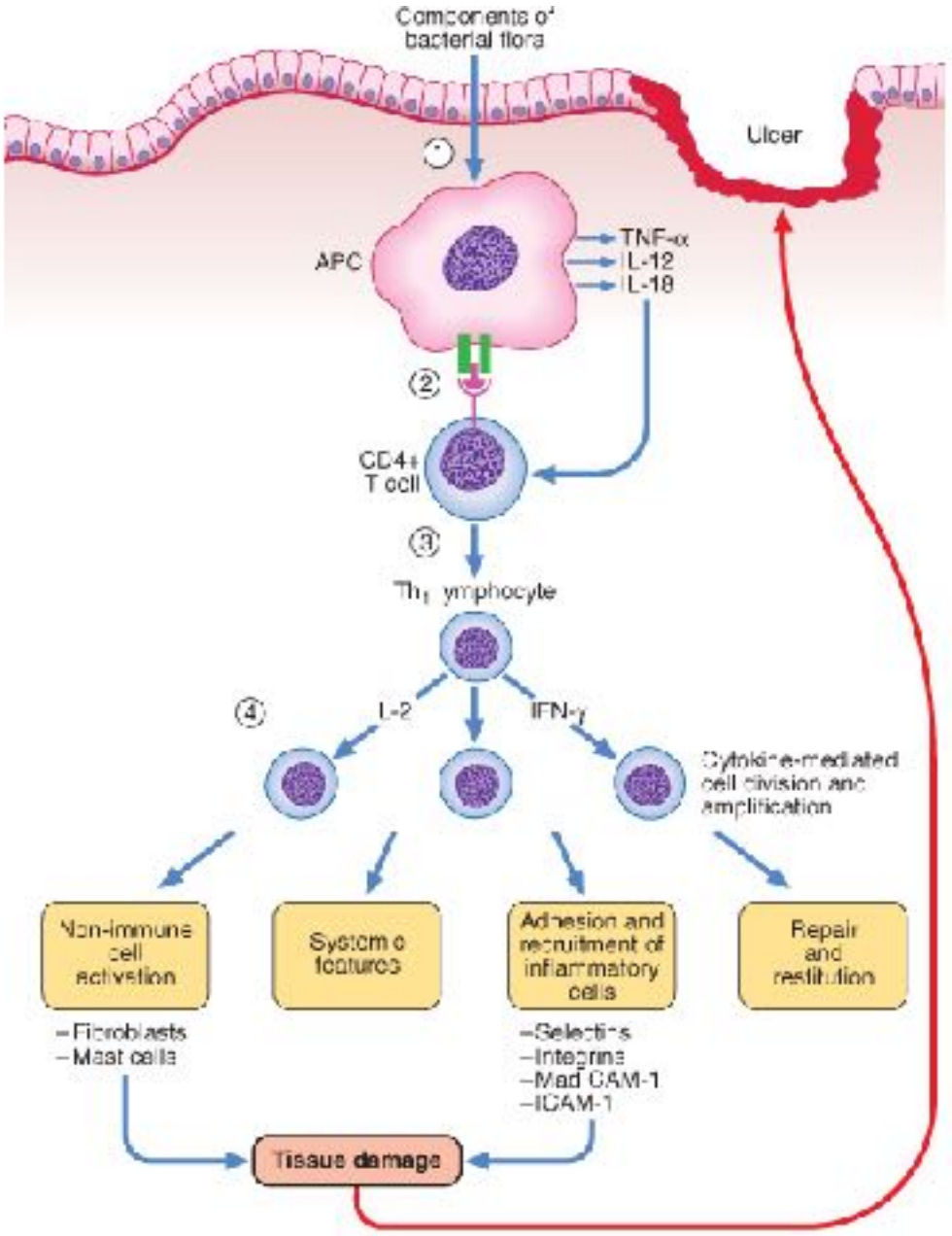
- Management;
  - Correct any deficiency
  - Follow a strict gluten-free diet (consultation with a dietitian is essential)
  - Review anti-endomysial antibodies, or tissue transglutaminase (should disappear with removal of gluten from diet).

Inflammatory Bowel Disease IBD

- Crohn's disease CD and Ulcerative Colitis UC are two GIT inflammatory diseases which are termed IBD.
- They are chronic, and wax and wane.
- They are similar in many ways but differ in area of involvement; UC affects the colon while CD affects all areas of the gut (mouth to anus).

Inflammatory Bowel Disease IBD

- In the West CD prevalence is 50-100 per 100 000, while UC is 100-200 per 100 000.
- The disease is induced by a trigger in genetically susceptible individuals -->inflammatory response.



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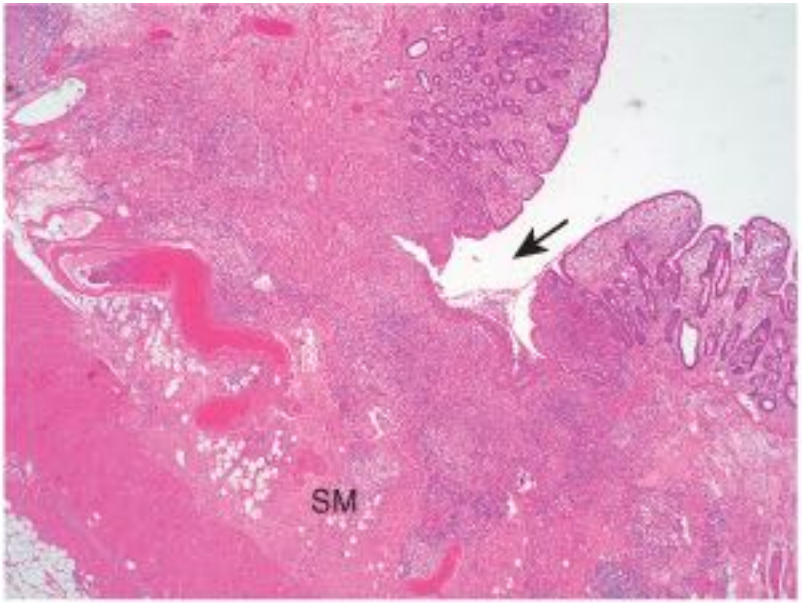

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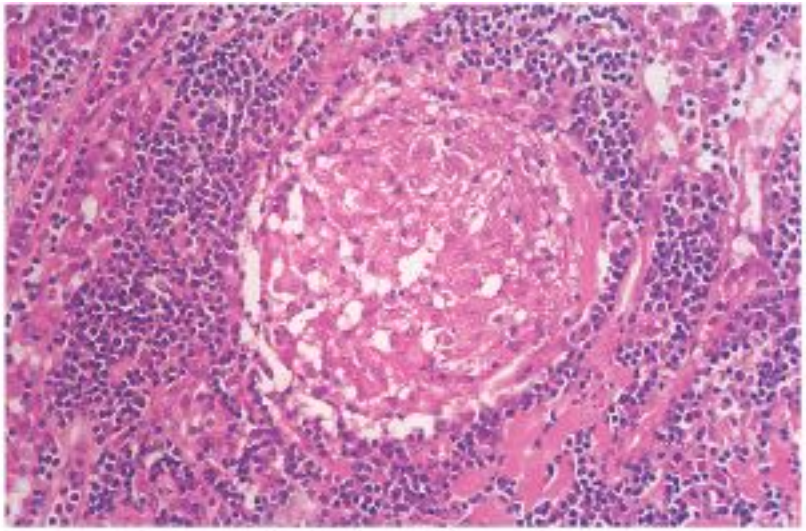


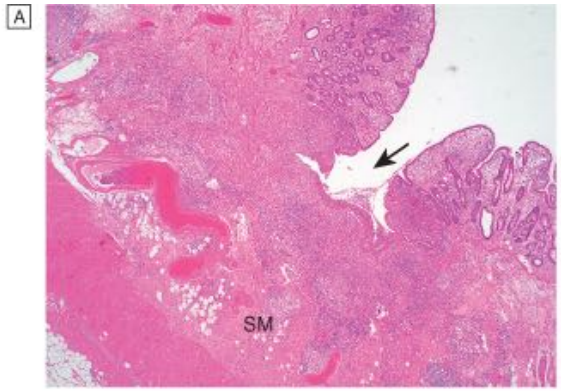


Image source: Tan et al. BDJ 2016

Crohn's disease

- Clinically;
  - Abd pain (when eating or spontaneous)
  - Weight loss
  - Watery diarrhea

Mal-absorption

Anaemia

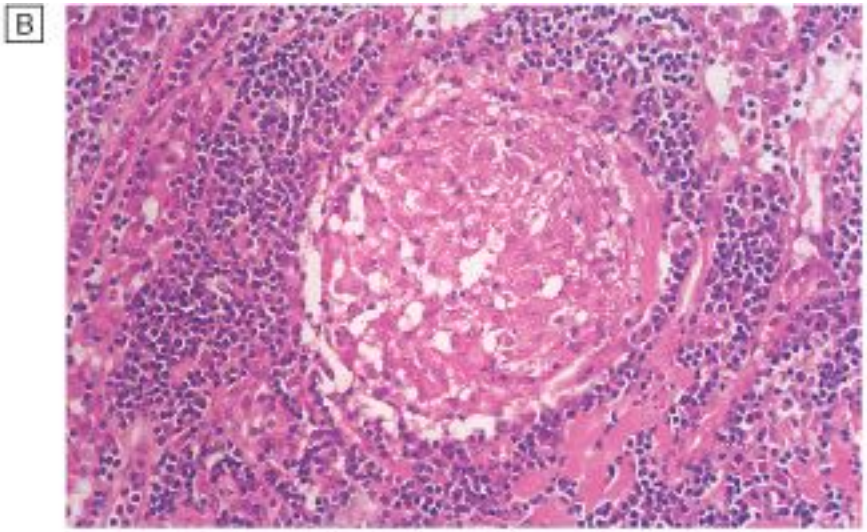
  - Weakness
  - Glossitis
  - Angular cheilitis
  - Oral ulcers
  - Tender abdomen (above inflamed area) and perianal tags and fissures

Severity of CD

	Mild	Severe
Daily bowel frequency	< 4	> 6
Blood in stools	+/-	+++
Stool volume (g/24 hrs)	< 200	> 400
Pulse (bpm)	< 90	> 90
Temperature (°C)	Normal	> 37.8, 2 days out of 4
Sigmoidoscopy	Normal or granular mucosa	Blood in lumen
Abdominal X-ray	Normal	Dilated bowel and/or mucosal islands
Haemoglobin (g/l)	Normal	< 100
ESR (mm/hr)	Normal	> 30
Serum albumin (g/l)	> 35	< 30

Crohn's disease

- Histologically;
  - Lymphocytic infiltration throughout all layers of the bowl.
  - Focal aggregates of epithelioid histiocytes, lymphocytes and sometimes giant cells -->granulomas -->ulcerated mucosa if near surface.



Crohn's disease

- Complications;
  - Toxic megacolon
  - Intestinal perforation
  - Fistulae developing between organs (bowel and upper GIT)
  - Cancer development (20% after 30 years of diagnosis)

Crohn's disease

- Treatment;
  - Aminosalicylates, corticosteroids and immuno-suppressants (azathioprine), but this is contraindicated if there is infection and abscess formation.
  - If there is abscess or fistula -->radiological assessment to locate lesion then surgical intervention with antibiotics.
  - Recurrence is very common in CD, but not common in UC

Oral Crohn's disease

- Lesions occurring in the oral cavity resemble those anywhere in the gut.
- Those can be associated with other GIT lesions, or be solo.
- Clinically;
  - Painless swelling of lip(s), cheek or face.
  - Firm (rubbery) consistency
  - The swelling might result in trauma to mucosa
  - Erythema and scaling of the perioral tissues
  - Mucosal tags (described as cobble stone)
  - RAS (in the buccal or labial vestibule, and usually linear)
  - Angular cheilitis
  - Scaly and fissured lips
  - Recurrent or persistent lymphadenopathy

Oral Crohn's disease

- Histologically;
  - Granulomas deep in the submucosa
  - Non-caseating
  - Epithelioid cells
  - Multi-nucleated giant cells
  - Chronic inflammatory cells

Oro-Facial Granulomatosis OFG

- Group of disorders characterized by;
  - Swellings in the oro-facial region
  - Chronic
  - Non-infectious
  - Histologically showing chronic inflammation and non-caseating granuloma

Oro-Facial Granulomatosis OFG

- Swelling mainly involves the lips
- Recurrent or persistent lymphadenopathy
- Painless
- Firm (rubbery consistency)
- One or both lips, uni- or bilateral
- The swelling can lead to angular cheilitis

Oro-Facial Granulomatosis OFG

- Those include;
  - Oral Crohn's disease
  - Oral Sarcoidosis
  - Forign body reaction
  - Allergy

Oro-Facial Granulomatosis OFG

Differential Diagnosis

Oral CD	GIT symptoms, oesophago-gastro-duodenoscopy, ileo-colonoscopy, radiography, biopsy
Oral Sarcoidosis	Pulmonary symptoms, chest x-ray, angiotensin converting enzyme (ACE), biopsy
Foreign body reaction	History of trauma, biopsy (dark field microscopy)
Allergy	History, patch testing, biopsy (increase in eosinophils, basophils)

- Treatment;
  - Systemic corticosteroids.
  - Steroid injections (triamcinolone) into the lesion.
  - Immuno-suppressants for resistant cases.
  - Oral ulcers are treated with topical corticosteroids and anti-septic mouthwashes.
  - Angular cheilitis, if secondary infected -->topical anti-fungal or antibiotic.