Belfast Pathology 2017

Gastrointestinal tract involvement by systemic disease

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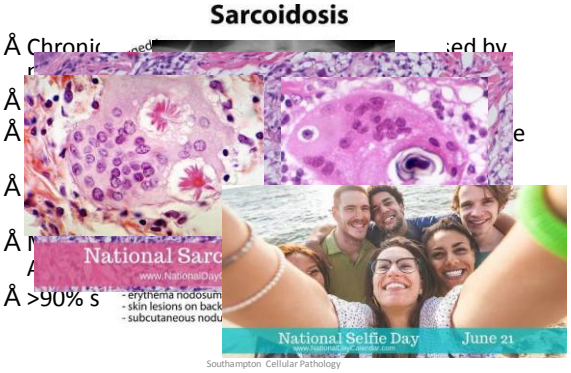
Plan

- Sarcoidosis
- Amyloid
- Mast cell disorders
- IgG4-related disease
- Dermatological conditions
- Behcet's disease

Sarcoidosis



- Chronic [illegible] ed by
- [illegible]
- [illegible] e
- [illegible]
- [illegible]
- >90% s

Sarcoidosis
Liver involvement

- Up to 70% show liver involvement
- Usually asym
- Portal tract & [illegible] omas and scarring may [illegible] tly or via secondary bil
- Portal hypertension
- Jaundice due to liver or bile duct involvement or extrinsic compression
- Ascites due to portal hypertension or peritoneal nodules

Granulomas in the liver
Primary biliary cholangitis
Primary sclerosing cholangitis
Autoimmune hepatitis
Viral hepatitis

Sarcoidosis
GI involvement

- Luminal GI tract involvement relatively rare
- Stomach is mos [illegible] lved site
- Other more co [illegible] granulomatous gastritis exist
- Oesophag [illegible] t possible but the lat
- Mucosal i [illegible] nptomatic
- Extrinsic c

Granulomatous gastritis
Crohn's disease
Helicobacter pylori
Unusual infections

Granulomas within the luminal GI tract
WIDE differential diagnosis!!
Infections
Inflammatory bowel disease
Other inflammatory conditions
Vasculitis
Immunodeficiency states
Granulomatous reactions to neoplasia
Reaction to foreign material

Sarcoidosis
Diagnosis

- Granulomatous inflammation
- *Appropriate clinical context*
- Exclusion of alternative granulomatous conditions
- Necrosis not usual but necrotising sarcoidosis can occur
- Serology e.g. angiotensin-converting enzyme, soluble interleukin-2 receptor (Th1 cells), neopterin (macrophages)

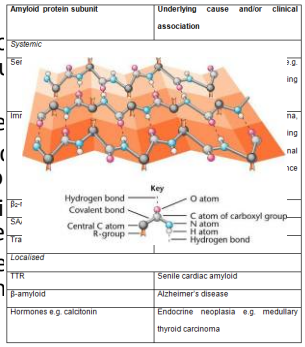
Schaumann bodies
Asteroid bodies
NOT specific!

Sarcoidosis
Practical points

- Portal tract and parenchymal involvement can lead to cholestasis and portal hypertension
- Mucosal involvement may be seen in the luminal GI tract – often as an incidental finding
- Differential diagnoses include many other granulomatous conditions which need to be excluded e.g. with appropriate additional stains for infective organisms as well as careful clinicopathological correlation

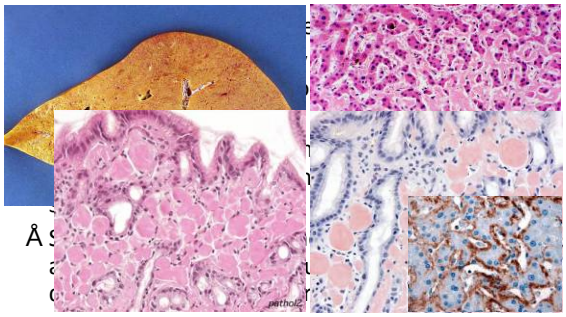
Amyloid

- A group c… pleated sheet stru… f different types
- Associate… mponent
- Many un… l with amyloido…
- Distributi… es therefore…
- Clinical fe… to underlyin…



Amyloid
GI & liver involvement

- S…



Amyloid
Diagnosis

- Demor…
- Early d… walls, advanc…
- Congo … A, kappa and lar…
- Molecu…
- Don't c… ngo red GATIVE
- Clinicopathological correlation important

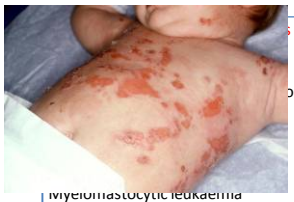
Amyloid
Practical points

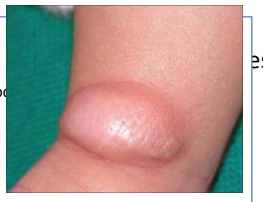
- May be identified incidentally, while GI biopsies sometimes taken to look for amyloid deposition
- Within GI biopsies, deposition most commonly seen in subepithelial region and within submucosal blood vessels
- Within liver, portal tract blood vessels commonly affected but deposition may be marked within sinusoids
- Congo red characteristic, IHC also useful

Mast cell disorders

- *Mastocytosis* relates to a range of conditions characterised by the presence of prominent mast cells that are clonal in nature
- Cutaneous *or* systemic
- Indolent *or* aggressive
- Most common in children – especially cutaneous

Mast cell disorders





Myelomastocytic leukaemia
Mast cell activation syndrome
Mast cell hyperplasia

Å Mastoc

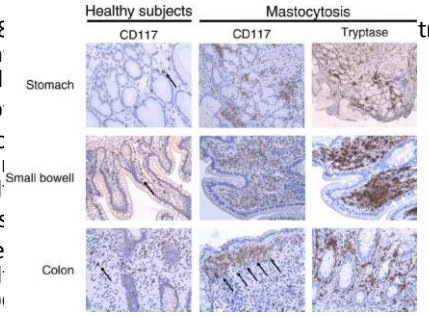
Histamine and heparin release from mast cells

Mast cell disorders

GI & liver involvement

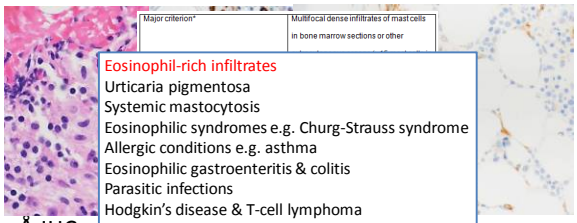
Å 50-8
rela
abd
Å Pep
Å Invc
subi
infil
Å Mas
Å Live
infil
hyp

tract-



Mast cell disorders

Diagnosis



Major criterion*
Multifocal dense infiltrates of mast cells in bone marrow sections or other

Eosinophil-rich infiltrates
Urticaria pigmentosa
Systemic mastocytosis
Eosinophilic syndromes e.g. Churg-Strauss syndrome
Allergic conditions e.g. asthma
Eosinophilic gastroenteritis & colitis
Parasitic infections
Hodgkin's disease & T-cell lymphoma
Langerhan's cell histiocytosis
Inflammatory bowel disease

Å IHC –
Å PCR-base

mutation

One minor criterion or three minor criteria are present. * This does not count as a criterion in systemic mastocytosis with an associated clonal haematological non-mast cell lineage disease

Mast cell disorders

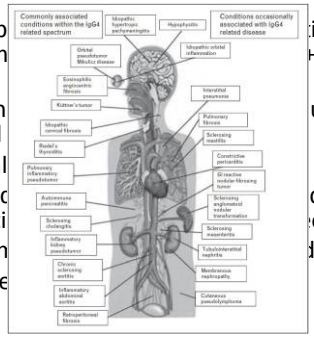
Practical points

Å *Mastocytosis* is a wide spectrum of conditions
Å Mast cells are normal GI lamina propria cells
Å Diagnosis requires prominent mast cell infiltrates in an appropriate clinicopathological context
Å Diagnosis should be considered when a monotonous infiltrate of regular lymphoid cells present, often with eosinophils
Å Mast cells can be difficult to identify on H&E and special stains required

IgG4-related disease

Å Lymphop
storiform
cells
Å Common
localised
Å Affects al
Å Focal or c
dysfuncti
Å Most con
Å 30% have

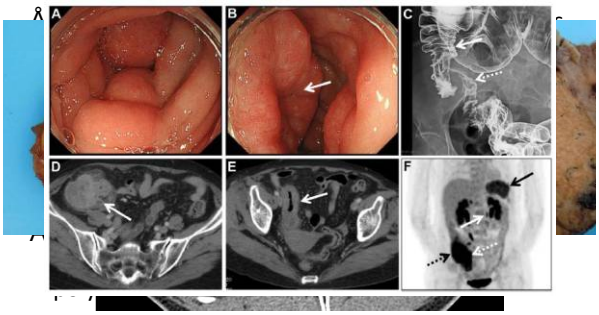
ion,
+ plasma
ut may be
d to organ
oplasia
decade



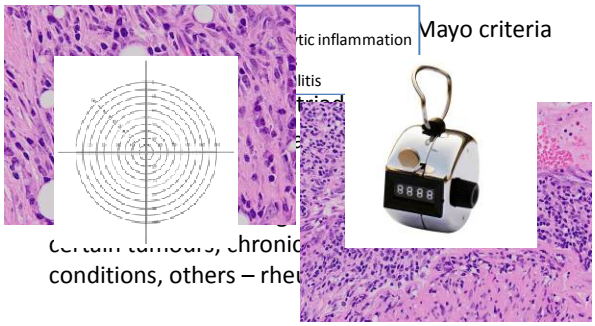
IgG4-related disease

GI & liver involvement

Å



IgG4-related disease
Diagnosis



tic inflammation

Mayo criteria

litis

certain tumours, chronic

conditions, others – rheu

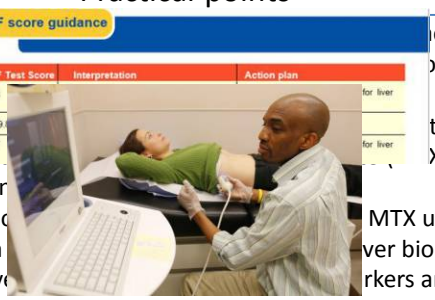
IgG4-related disease
Practical points

- May involve one or multiple anatomical sites
- Diagnosis based on clinical, radiological and histopathological factors (published criteria)
- Histopathological assessment involves identification of key morphological criteria, prominent IgG4+ plasma cells and an IgG4+/IgG+ ratio of >40%
- Sampling variability and immunosuppressive treatment may alter histopathological features
- Prominent IgG4+ plasma cells may also be found in other (non-IgG4-related disease) conditions

Dermatological conditions
Examples

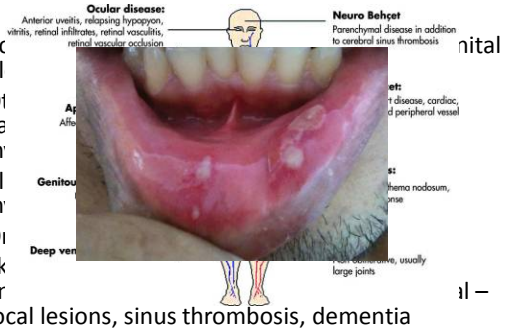
- *Coeliac disease* and dermatitis herpetiformis
- *Inflammatory bowel disease* and cutaneous manifestations
- The *oesophagus* and various skin conditions
- The *liver and treatment* for skin diseases

Dermatological conditions
Practical points



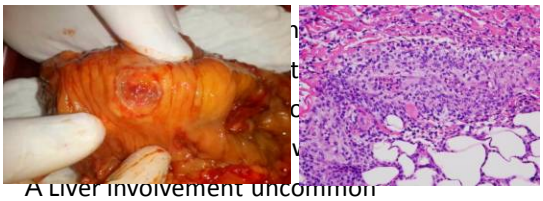
- M… …ct
- T… …on-a…
- T… …t t… …X), acne ar…
- The abo… …MTX used to be a… …ver biopsy Howeve… …rkers and elastography has led to reductions in liver biopsy

Behcet's disease



- C… …nital ul…
- O… ga… in…
- Cl… in…
- O…
- Sk… ar… …l – focal lesions, sinus thrombosis, dementia

Behcet's disease
GI & liver involvement



- …n…
- …t…
- …c…
- …v…
- Liver involvement uncommon

Behcet's disease
Diagnosis

Å Char
Å Exclu
Å Sets p for Behc
Å GI u
Å Lym
Å Leuk
Å Hist n's dise

Sign/symptom	Points*
Ocular lesions	2
Genital aphthosis	2
Oral a	
Skin l	
Neuro	
Vascu	
Positive pathergy test	1**

Key: * A score of 4 or above indicates Behcet's Disease; ** the pathergy test (insertion of a sterile needle into the skin and examination 1-2 days later for the presence of a localised inflammatory reaction at the site) is optional, but when conducted, an extra point may be assigned for a positive result.

Differential diagnosis
Crohn's disease
Polyarteritis nodosa
Granulomatosis with polyangiitis (Wegener's)

Behcet's disease
Practical points

Å Rare condition characterised by the presence of mucosal ulceration and other features e.g. arthritis
Å Histological features of GI biopsies often non-specific but characteristic finding is lymphocytic vasculitis affecting submucosal veins
Å Diagnosis requires recognition of appropriate clinical features and may be supported by appropriate histological appearances, even if GI biopsies do not show classical pattern of vasculitis

Conclusion

Å Many systemic diseases can affect the luminal GI tract and/or the liver
Å Wide spectrum of clinical manifestation depending on pattern and extent of involvement
Å Involvement may be asymptomatic
Å Diagnosis may be incidental or critical and usually relies on clinicopathological correlation
Å Treatments for systemic disease may also result in important changes