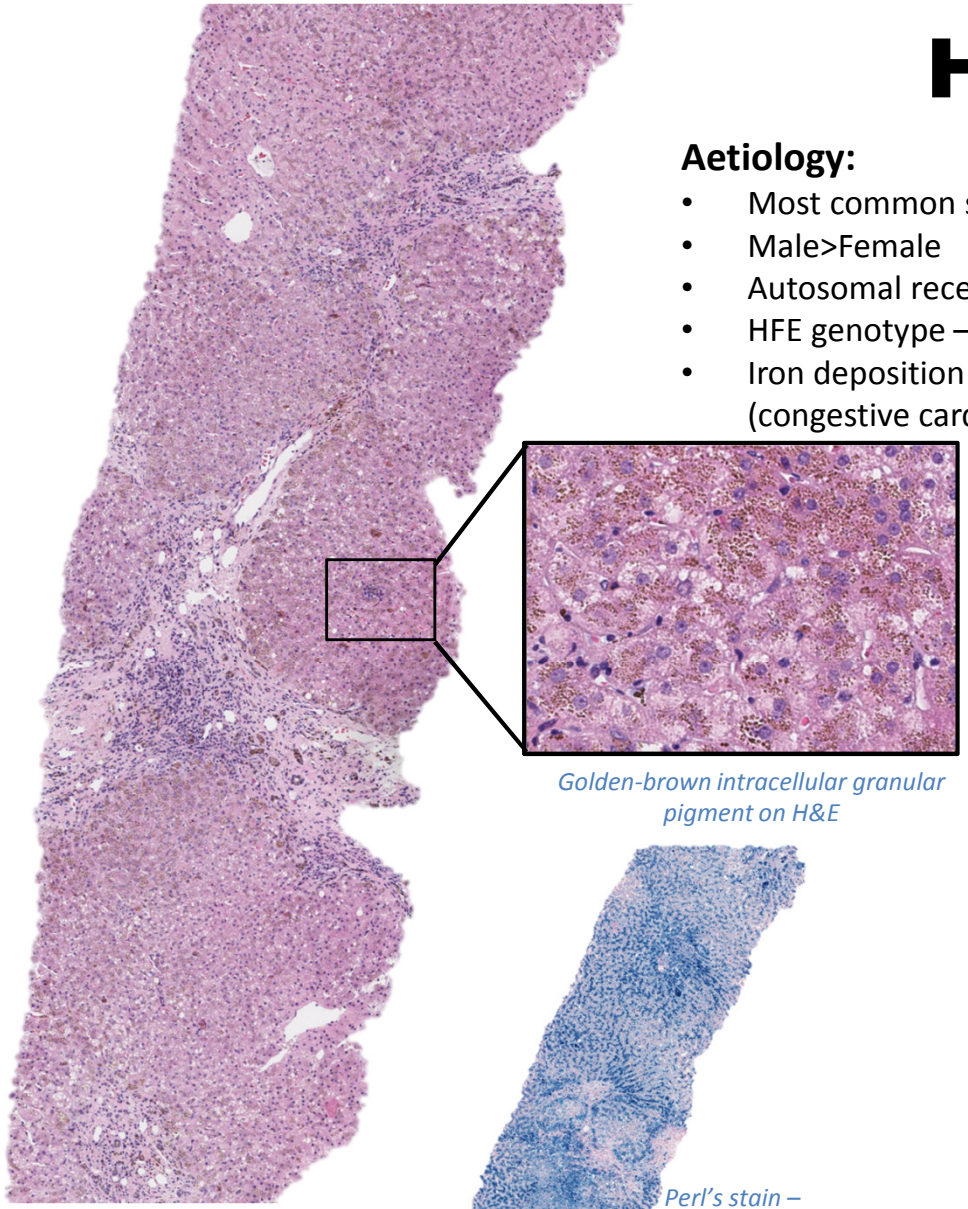
Haemochromatosis



Golden-brown intracellular granular pigment on H&E

Perl's stain – Grade 4 iron deposition

Aetiology:

- Most common single gene disorder in North European population
- Male>Female
- Autosomal recessive
- HFE genotype – usually C282Y homozygous (80%) with other rarer subtypes
- Iron deposition primarily in liver, but also pancreas (causing type 2 diabetes), heart (congestive cardiac failure, arrhythmias), gonads (hypogonadism), arthritis, skin etc.

Clinical/biochemical picture:

- Often asymptomatic & identified incidentally on bloods
- Elevated Ferritin with elevated transferrin saturation (TIBC)

Liver Biopsy:

- Often the diagnosis has already been confirmed by genetic tests. The biopsy is usually performed to confirm diagnosis & assess degree of fibrosis
- Can occasionally be an incidental finding

Histology:

- Coarse golden-brown granular pigment (iron) within hepatocytes often visible on H&E (in severe disease can also be within duct epithelium and vessel walls)
- Perl's stain highlights iron pigment with blue granular staining (varies from a faint blue hue to dark granular staining visible at a low power) - whilst a small amount of pale staining pigment can be considered normal, prominent pigment should always raise suspicion for haemochromatosis and genetic tests should be considered (NB: any iron staining in a pre-menopausal female is abnormal)
- Longstanding disease can be associated with increasing fibrosis and eventually cirrhosis (as seen in this example)
- Iron deposition can be seen in other conditions including chronic excess alcohol consumption.

Clinical course:

- Increased risk for developing HCC (especially with advanced fibrosis/cirrhosis)
- Management options: Regular phlebotomy (usually ~450ml per time) or iron chelation therapy
- Once cirrhotic may require transplantation