Primary Sclerosing Cholangitis

Definition of primary sclerosing cholangitis

- Idiopathic disorder characterised by inflammation, fibrosis and structuring of the intra and extra-hepatic bile ducts.

Epidemiology of primary sclerosing cholangitis

- Male:Female = 2:1
- Usually presents from 20-30 years old onward but can present earlier
- Studies show a prevalence varying from 0.2 to 8.5 per 100,000
- Higher prevalence in areas where ulcerative colitis is more common

Aetiology of primary sclerosing cholangitis

- PSC is strongly associated with inflammatory bowel disease (IBD)
    - Most studies show an IBD prevalence of 60-80% in PSC patients
    - The commonest type is ulcerative colitis (UC): present in up to 80% of those with IBD and PSC.
- The underlying cause is unknown but there is thought to be an autoimmune component with a higher prevalence of certain HLA alleles (A1, B8, DR3).

Presentations of primary sclerosing cholangitis

- History:
    - Fatigue
    - Pruritus
    - Weight loss
    - Right upper quadrant (RUQ) pain
    - Recurrent biliary infections
- Examination:
    - Jaundice
    - Hepatomegaly
    - Features of chronic liver disease
        - Dupuytren's contracture; palmar erythema; gynaecomastia; spider naevi; ascites; cachexia
    - Features of IBD
        - Stoma; abdominal scars; mouth ulcers; erythema nodosum

Differential diagnosis of primary sclerosing cholangitis

- Any other cause of chronic liver disease (see chronic liver disease section)

Investigation of primary sclerosing cholangitis

- Blood tests:
    - Liver function tests
        - Usually show an elevated alkaline phosphatase, bilirubin and transaminases but these can all be in the normal ranges
    - Autoimmune profile
        - A range of autoantibodies can be present including ANCA , SMA and ANA
        - AMA (antimitochondrial) are usually absent

- Full liver screen (see chronic liver disease section) to rule out other causes of cirrhosis

- Imaging:
  - Ultrasound liver
    - Not usually diagnostic and can be normal. Gallstones and gallbladder thickening can be seen.
  - Magnetic resonance cholangiopancreatography (MRCP)
    - This has become the diagnostic imaging of choice and is has none of the associated morbidity of ERCP.
    - Sensitivity > 80% and specificity >87% for PSC diagnosis

- Liver biopsy:
  - A biopsy is not needed for diagnosis of PSC.
  - Histological changes are often non-specific, especially in the early stages.
  - Liver biopsy is performed if MRCP and subsequent ERCP are non-diagnostic.

Diagnosis of PSC (American Association of Liver Disease guidelines)

- Cholestatic liver biochemistry
- Cholangiography (MRCP or ERCP) showing characteristic changes to bile ducts including segmental strictures and dilatations

Initial management of primary sclerosing cholangitis

- Anti-pruritics: as per management in PBC (see PBC pages)
- Vitamin A,D,E and K replacement
  - Vitamin D and Calcium replacement. Calcium 1g and vitamin D 800 IU daily
- If bacterial cholangitis
  - Antibiotics plus therapeutic drainage of the obstruction
  - Sometimes patients require long-term prophylactic antibiotics if they are suffering recurrent infections
- Stenting/drainage of strictures
  - Patients who are symptomatic from strictures with jaundice, cholangitis, RUQ pain or worsening liver function tests are candidates for intervention.
  - Endoscopic balloon dilatation, sphincterotomy and stent placement should be performed initially.
  - If endoscopic therapy is unsuccessful then biliary dilatation and/or stent placement should be attempted percutaneously.
- Orthotopic liver transplant
  - Transplantation criteria are the same for PSC patients as for all patients with chronic liver disease and also include recurrent cholangitis, intractable pruritus and limited cholangiocarcinoma.
  - Outcomes are good with a 5-year survival rate of 85%.

Further management of primary sclerosing cholangitis

- PSC patients with cirrhosis should be managed as for all chronic liver disease patients (see pages on chronic liver disease).

Complications of primary sclerosing cholangitis

- Biliary infections

- Cirrhosis and associated complications (see pages on decompensated chronic liver disease)
- Cholangiocarcinoma
    - Patients with PSC have a higher risk for cholangiocarcinoma. Studies show a 10-year cumulative incidence of 7-9%.
    - Any PSC patient whose liver biochemistry deteriorates should be investigated for a possible underlying cholangiocarcinoma.

- Colorectal carcinoma
    - Patients with PSC and UC are at higher risk of developing colorectal carcinoma and should undergo colonoscopic surveillance 1-2 yearly from PSC diagnosis

Prognosis of primary sclerosing cholangitis:

- 10 year survival is 65%