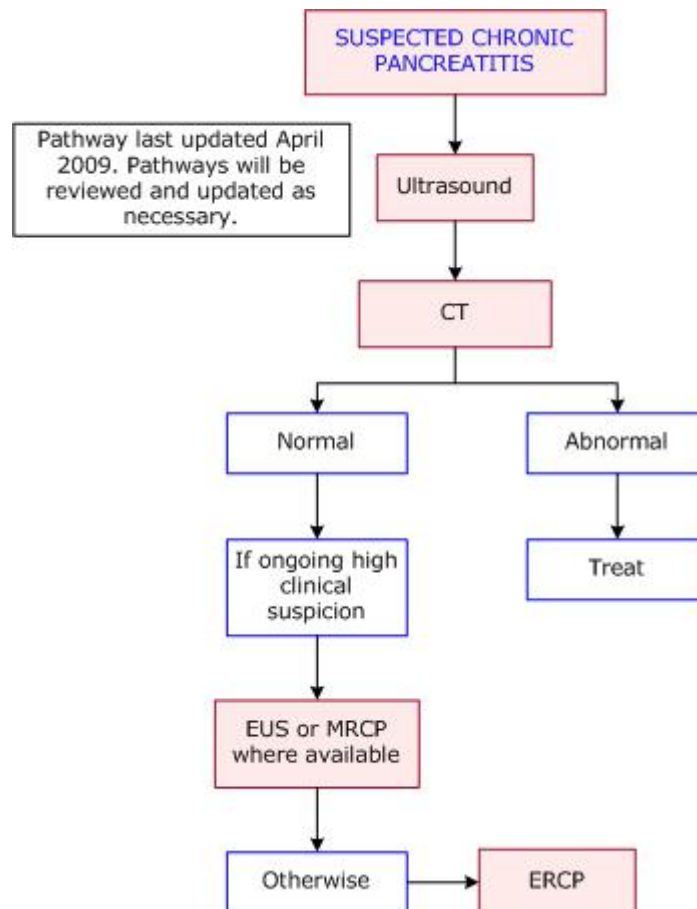




DIAGNOSTIC IMAGING PATHWAYS

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ULTRASOUND

- Imaging modality of choice for initial imaging of the biliary tract. [1](#)
- Ultrasound is able to diagnose chronic pancreatitis with a sensitivity of 60-70% and a specificity of 80-90%. [2,3](#)
- Limited by patient body habitus and overlying bowel gas.
- Ultrasound features of chronic pancreatitis include: [3,17](#)
 - Pancreatic calcification
 - Pancreatic enlargement or atrophy
 - Asymmetric and irregular contours of the pancreas
 - Dilatation of pancreatic ducts
 - Pancreatic calculi
 - Heterogeneous parenchymal texture pattern with increased echogenicity
 - Pancreatic cysts, pseudocysts, and abscesses
- Useful for follow-up of fluid collections. Pseudocysts or "retention" cysts in chronic pancreatitis rarely undergo spontaneous resolution. [3,16](#)

COMPUTED TOMOGRAPHY

- Helpful for the diagnosis of moderate to severe chronic pancreatitis and its complications. [17](#)
- Sensitivity of 74-90% and specificity of 85% in the diagnosis of chronic pancreatitis. [4](#)
- Superior to transabdominal US in detection of calcifications and cystic areas. [4](#)
- CT features of chronic pancreatitis include pancreatic ductal dilatation, parenchymal atrophy, calcification and calculi. [4](#)
- Useful for exclusion of malignancy or mass.

ENDOSCOPIC ULTRASOUND

- Sensitivity of 93% for the diagnosis of chronic pancreatitis. When combined with MRCP, the sensitivity improves to 98% and the specificity increases from 93% to 100%. [18](#)
- Detects changes of mild chronic pancreatitis that may not be detectable from other imaging modalities, but can be confirmed by histology. [6-9](#)
- Diagnostic features include: [17](#)
 - Main pancreatic duct dilatation (>3mm) and side branch duct ectasia
 - Lobularity of contours
 - Heterogenous echogenicity of parenchyma with small cystic changes
- Advantages: [5](#)
 - Less invasive than ERCP with fewer complications. [5](#)
 - Can be used for drainage of pseudocysts and for coeliac plexus blocks
- Disadvantages: [5](#)
 - Some concern of overdiagnosis of chronic pancreatitis, particularly in the elderly [18](#)
 - Inability to perform some therapeutic applications such as sphincterotomy and stent placement in the pancreatic duct
 - High inter-observer variability
 - Requires sedation and endoscopy.
 - Limited availability.

MAGNETIC RESONANCE CHOLANGIOPANCREATOGRAPHY (MRCP)

- Sensitivity of 65% and specificity of 90% for the diagnosis of chronic pancreatitis. The sensitivity improves to 98% when combined with EUS. [18](#)
- More sensitive for the diagnosis of early and mild disease compared to CT and transabdominal US. [17](#)
- Non invasive alternative to diagnostic ERCP, with comparable accuracy. [10,11](#)
- Useful in identifying pancreatic duct anomalies eg. pancreas divisum. [12](#)
- Visualisation of the pancreatic duct can be improved by secretin stimulation and can be used to detect stenosis of minor papilla in pancreas divisum. [12](#)

- Advantages: non-invasive outpatient procedure, easily performed, and involves no use of contrast agent or radiation. MRCP is more cost effective compared to ERCP.
- Limitations:
 - Does not offer therapeutic opportunity.
 - Limited availability.

ENDOSCOPIC RETROGRADE CHOLANGIOPANCREATOGRAPHY (ERCP)

- "Gold standard" imaging procedure for diagnosing chronic pancreatitis and planning treatment. [13](#)
- Main indications for ERCP in chronic pancreatitis are: [14](#)
 1. To assist the diagnosis.
 2. To evaluate the status of the pancreatic and biliary ducts.
 3. To detect anatomical variations such as pancreatic divisum.
 4. To define the relation between a fluid collection and the pancreatic duct prior to percutaneous or surgical drainage.
- Advantages: provides therapeutic opportunity.
- Disadvantages: [15](#)
 - Requires direct cannulation of the common bile or pancreatic duct.
 - ~ 4% complication rate (pancreatitis, haemorrhage, sepsis, bile leakage and mortality) [6](#).
 - Unsuccessful cannulation of the ducts in 3-9%.

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Website

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