INTRODUCTION:

Magnetic resonance cholangiopancreatography (MRCP) is a non-invasive radiologic technique for imaging the biliary and pancreatic ducts, and it is used to evaluate patients with cholestatic liver function tests, right upper quadrant pain, and recurrent pancreatitis. The MRCP uses magnetic resonance imaging (MRI) to produce detailed pictures of the pancreas, liver, and bile ducts. MRCP is reliable for the diagnosis of ductal abnormalities, e.g., pancreas divisum. It is also used to diagnose bile duct stones and assess the level of obstruction. MRCP is especially useful when a noninvasive exam is desired.

INDICATIONS FOR MRCP:

- For evaluation of suspected congenital anomaly of the pancreaticobiliary tract, e.g., aberrant ducts, choledochal cysts, pancreas divisum or related complications.
- For evaluation of chronic pancreatitis or the complications related to such (pseudocysts and bile duct strictures).
- Preoperative evaluation: Prior to surgery or other invasive procedure.
- Post operative evaluation: For evaluation of suspected biliary abnormalities after surgery or invasive procedure.
- For further evaluation of inconclusive abnormalities identified on other imaging (ultrasound, CT, or MRI).
- For evaluation of abnormality related to the biliary tree based on symptoms or laboratory findings and initial imaging has been performed.

ADDITIONAL INFORMATION RELATED TO MRCP:

Request for a follow-up study - A follow-up study may be needed to help evaluate a patient’s progress after treatment, procedure, intervention or surgery. Documentation requires a medical reason that clearly indicates why additional imaging is needed for the type and area(s) requested.

MRI imaging – Metal devices or foreign body fragments within the body, such as indwelling pacemakers and intracranial aneurysm surgical clips that are not compatible with the use of MRI, may be contraindicated. Other implanted metal devices in the patient as well as external devices such as portable O2 tanks may also be contraindicated.
**Ultrasound** - Ultrasound is the initial imaging technique used for screening suspected biliary or pancreatic disease, but it has limited ability to characterize abnormalities in the biliary and pancreatic ducts.

**Endoscopic retrograde cholangiopancreatography (ERCP)** – ERCP can combine diagnosis with therapeutic intervention, e.g., removal of stones, but it is an invasive procedure that carries significant risk of complications, e.g., pancreatitis. ERCP is also technically challenging in patients with post-surgical biliary and/or surgical anastomoses.

**Magnetic resonance Cholangiopancreatography (MRCP)** – MRCP is a noninvasive method for depicting biliary and pancreatic ducts and assessing the level of obstruction. It is also used to evaluate congenital anomalies of these structures. In clinical practice MRCP is often combined with conventional MRI imaging of the liver and pancreas. MRCP does not require the use of any contrast materials. Unlike ERCP, it does not combine diagnosis with therapeutic intervention. MRCP is not cost effective if the patient will need ERCP mediated intervention after the MRCP. MRCP is preferred over ERCP when a noninvasive examination is needed or when there is a very small likelihood that the patient will need therapeutic intervention afforded by ERCP. Secretin-enhanced MR Cholangiopancreatography has been recently developed to improve the diagnostic quality of MRCP images.

**Cystic Pancreatic neoplasms**: In the evaluation of cystic neoplasms, MRP is more sensitive than ERCP in differentiating mural nodules from mucin globules (40–44). It also consistently demonstrates the internal architecture of the main duct and the extent of IPMN better than ERP. (ACG-GL)

**Biliary strictures**: Approximately 15% of biliary strictures in the western world are benign. 80% are related to previous surgery, usually an injury during gallbladder surgery. After liver transplantation anastomatic strictures usually develop 3-6 months after surgery. Rare causes of stricture formation include infectious agents such as TB, parasites and viruses. Other etiologies include recurrent pyogenic cholangitis, Mirizzi syndrome with external compression of the bile duct by an inflamed gallbladder, blunt trauma and an even smaller number of strictures of unknown etiology also occur.

**PSC (primary sclerosing cholangitis)**: Magnetic resonance cholangiography is increasingly available but does not yet visualize the intrahepatic bile ducts sufficiently to replace direct cholangiography. Neither liver histology nor cholangiography alone will reliably reflect the severity of the disease. They must be used together with symptoms, physical findings, blood tests, and imaging or upper endoscopy tests that indicate the presence and severity of portal hypertension. (Insights into Imaging)
REFERENCES


