

Innovation in Body MRI - MRCP: Techniques & Pitfalls

David J LOMAS, University of Cambridge, UK

djl15@radiol.cam.ac.uk

Highlights

- 2 main techniques – intrinsic T2W & Hepatobiliary contrast medium enhanced T1w
- Innovations include improving spatial resolution and functional assessment
- Pitfalls commonly arise from pneumobilia and anatomical/surgical variations

Target audience: – Radiologists, Technicians, Radiographers, Physicists with an interest in body MRI

OUTCOME/Objectives: –

- Understand the basic principles for both T2w and contrast enhanced T1w MRCP.
- Identify the key factors important for achieving diagnostic image quality.
- Outline the main indications and appropriate use of MRCP examinations.
- Appreciate the importance of normal variants and post-surgical anatomy for accurate interpretation of MRCP.
- Learn and recognise common pitfalls related to artefacts, anatomy and pathology.

TECHNIQUES

Effective **T2w MRCP** imaging utilises contrast from long T2 value biliary and pancreatic secretions. Ideally this can be achieved using a fat suppressed FSE/TSE sequence with a long effective TE 600-800msec. Breath-hold single shot half-Fourier and full Fourier acquisitions are widely used to obtain rapid thick section or projection images similar to ERCP images. 3D FSE/TSE sequences, typically with parallel acceleration and respiratory triggering, are used to obtain thin section during a several minute acquisition. **Contrast enhanced techniques** utilise hepatobiliary contrast media that are excreted into the biliary system, typically 10-30 minutes post intravenous injection. Breath-hold 3D fat suppressed T1w breath-hold imaging is obtained prior to injection and at suitable time intervals subsequently to demonstrate the biliary tree and progression of contrast medium into the duodenum.

PITFALLS

Interpretation requires an appreciation of the normal duct anatomy and other fluid containing tissues, anatomical spaces and organs in the field of view. False positive calculi may arise from debris, bile motion, haemorrhage, wall folding, overlapping ducts and intraluminal gas. False positive strictures may arise from adjacent vascular structures, previous surgery and transplantation mismatches.

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