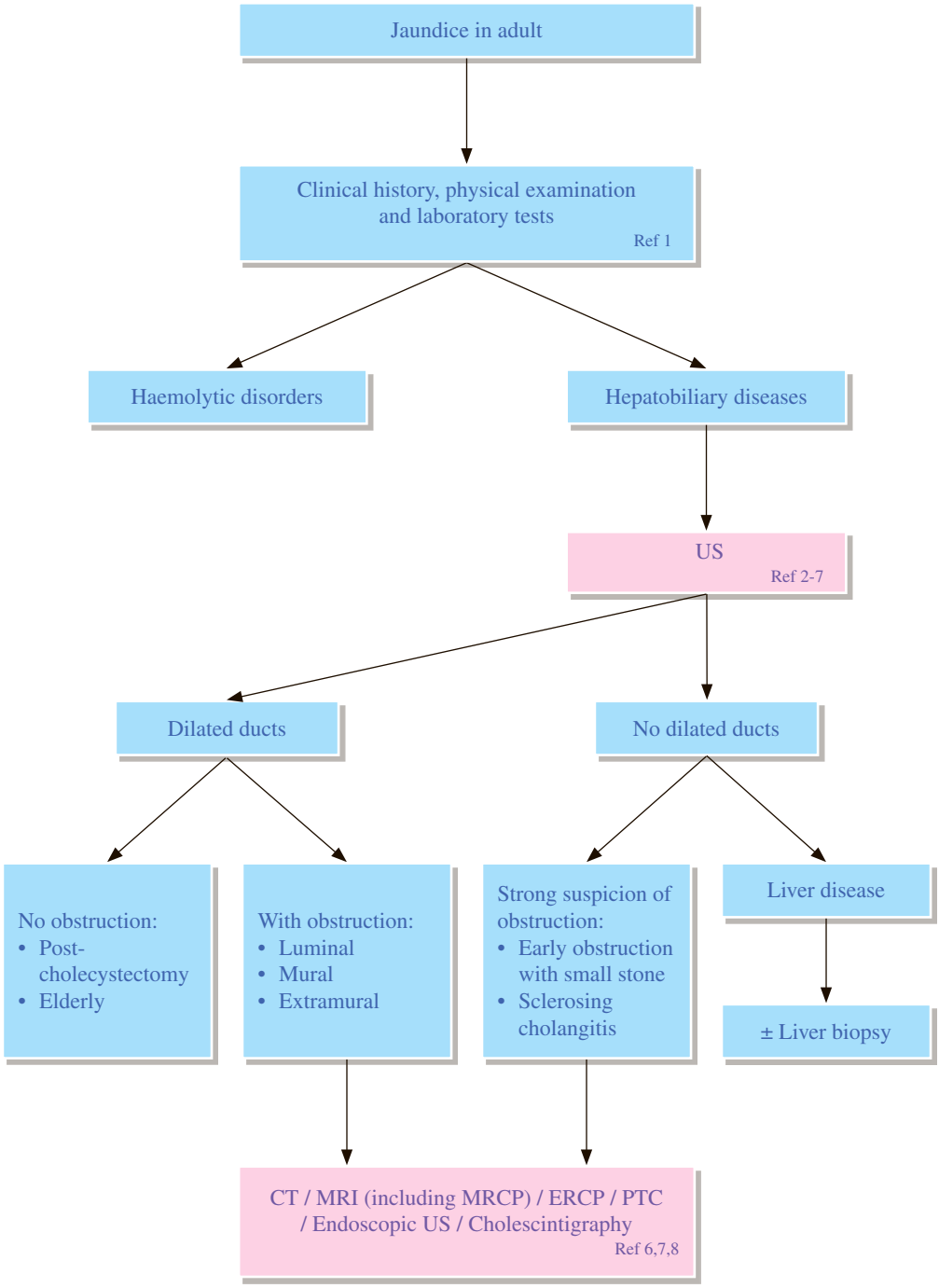
Jaundice in adult
Clinical history, physical examination and laboratory tests
Ref 1
Haemolytic disorders
Hepatobiliary diseases
US
Ref 2-7
Dilated ducts
No dilated ducts
No obstruction:
• Post-cholecystectomy
• Elderly
With obstruction:
• Luminal
• Mural
• Extramural
Strong suspicion of obstruction:
• Early obstruction with small stone
• Sclerosing cholangitis
Liver disease
± Liver biopsy
CT / MRI (including MRCP) / ERCP / PTC / Endoscopic US / Cholescintigraphy
Ref 6,7,8

REMARKS

1 US

1.1 US is a non-invasive, accurate and reliable technique for assessing the gallbladder, common bile duct and intrahepatic ducts, and should be employed as the primary investigation for evaluating the biliary system. It is also valuable in the detection of liver diseases.

1.2 US detection of pancreatic lesion is less reliable in certain patients, mainly due to overlying bowel gas.

2 Nuclear medicine

2.1 In very early biliary obstruction, nuclear medicine may be useful as US may not detect abnormality in the liver. Alternatively, a repeat US may show progressively dilated bile ducts. US is preferred as the initial screening test to provide anatomic details of the bile ducts.

2.2 Hepatobiliary scintigraphy provides a non-invasive method for evaluation of biliary system patency.

3 CT

3.1 CT is indicated when tumour is suspected and when US is inadequate.

3.2 It is very sensitive in detecting gallstones, air in the biliary tree and extrahepatic lesions obscured by bowel gas on US.

4 MRI

4.1 MRI can demonstrate both the site and cause of biliary obstruction. For detection of ductal calculi, magnetic resonance cholangiopancreatography (MRCP) is the most sensitive non-invasive technique.[6]

5 Cholangiography

5.1 Cholangiography by endoscopic retrograde cholangiopancreatography (ERCP) or percutaneous transhepatic cholangiogram (PTC) is the definitive imaging modality in the assessment of the biliary tree but both are invasive. ERCP is better for low obstruction while PTC is more reliable for high obstruction.

5.2 Due to significant advances in cross-sectional imaging, in particular the advent of MRCP, ERCP currently has an almost exclusively therapeutic role. The main indication for ERCP remains management of common bile duct stones. It also remains the standard for stent placement in cases of obstructive jaundice.[6]

6 Endoscopic US

6.1 Endoscopic US is the most accurate method for the detection of small ductal stones and small papillary or periampullary tumours. It allows biopsy of the pancreas without risk of tumour seeding.[7]

REFERENCES

1. Moseley RH. Evaluation of abnormal liver function tests. Med Clin North Am. 1996; 80: 887-906.
2. Baron RL, Stanley RJ, Lee JKT, Koehler RE, Melson GL, Balfe DM, et al. A prospective comparison of the evaluation of biliary obstruction using computed tomography and ultrasonography. Radiology. 1982; 145: 91-98.
3. Mittelstaedt CA. Ultrasound of bile ducts. Semin Roentgenol. 1997; 32: 161-171.
4. Baron RL. Computed tomgraphy of the bile ducts. Semin Roentgenol. 1997; 32: 172-187.
5. Robledo R, Muro A, Prieto ML. Extrahepatic bile duct carcinoma: US characteristics and accuracy in demonstration of tumors. Radiology. 1996; 198: 867-873.
6. Lalani T, Couto CA, Rosen MP, et al. ACR Appropriateness Criteria® Jaundice. Available at https://acsearch.acr.org/docs/69497/Narrative/. American College of Radiology. Accessed 2017 June 2.
7. The Royal College of Radiologists. iRefer: Making the best use of clinical radiology. 7th ed. London: The Royal College of Radiologists; 2012. Section G27.
8. Shlansky-Goldbery R, Weintraub J. Cholangiography. Semin Roentgenol. 1997; 32: 150-160.
9. Tulchinsky M, Ciak BW, Delbeke D, Hilson A, Holes-Lewis KA, Stabin MG, et al. SNM Practice Guideline for Hepatobiliary Scintigraphy 4.0. J Nucl Med Technol. 2010; 38: 210-218.