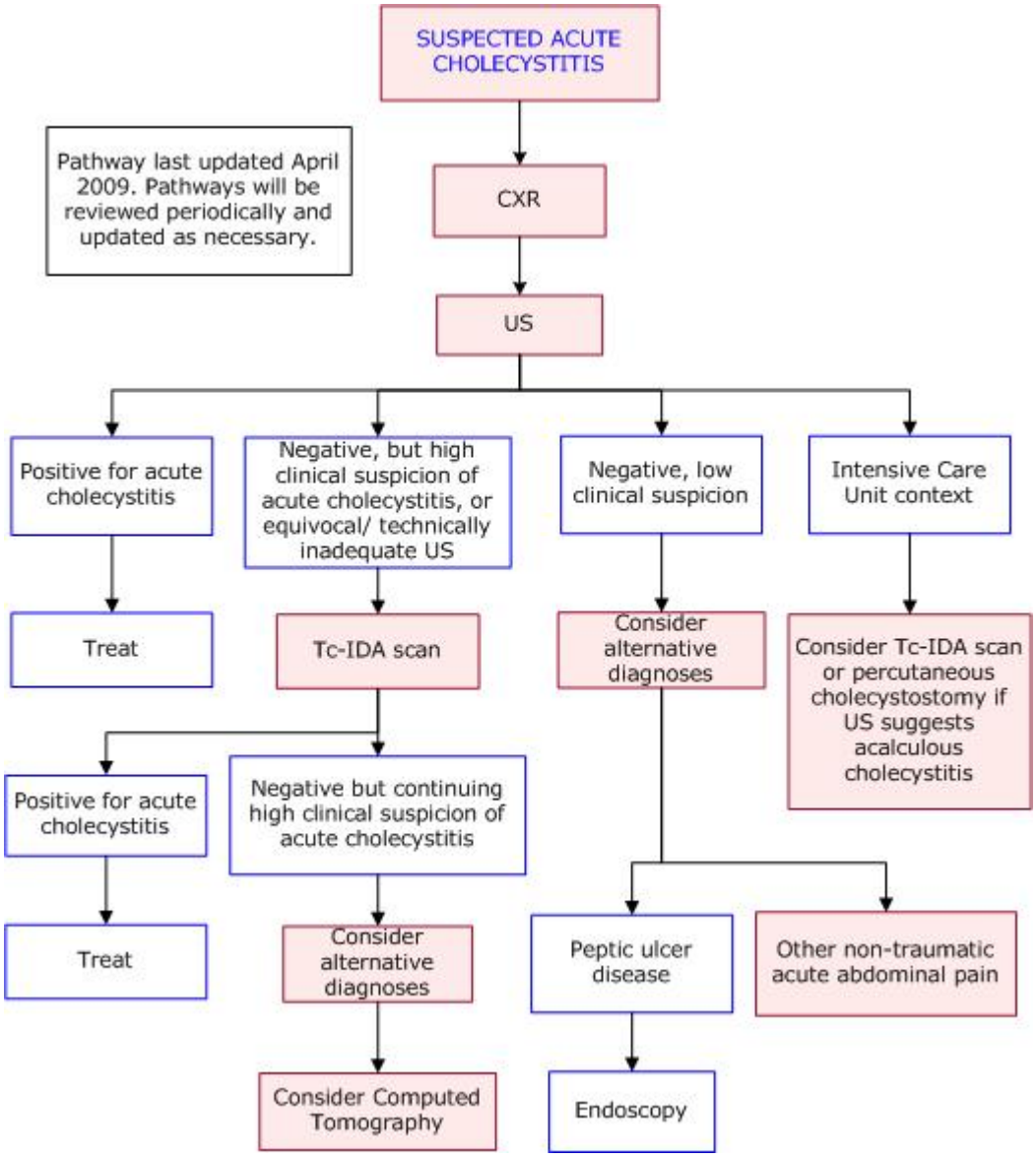

ACUTE RIGHT UPPER QUANDRANT PAIN/CHOLECYSTITIS

- Acute cholecystitis is a common cause of acute right upper quadrant pain but other conditions such as peptic ulcer disease and pancreatitis can mimic acute cholecystitis.

Plain Radiography

- Abdominal radiographs are usually not indicated, as most gallstones are not radio-opaque.
- Chest radiographs may be performed to exclude a thoracic cause of pain and bowel perforation. 1

Ultrasound

- Initial investigation of choice for suspected acute cholecystitis. 2-4
- Ultrasonographic signs of acute gallbladder inflammation include gallbladder wall thickening/oedema, pericholecystic fluid, gallstones, and positive ultrasonic Murphy's sign. 4,5
- >90% diagnostic accuracy and varies with the morphologic criteria used. 4,6-8
- Colour/power Doppler increases accuracy over Gray-scale sonography. 6
- Advantages: allows evaluation of other abdominal structures (can identify an alternative diagnosis), provides preoperative information such as gallbladder size, stone size, gallbladder wall status, and the presence of biliary dilatation. 9

Tc-IDA Radionuclide Scan

- Superior diagnostic accuracy and specificity compared to ultrasound. 7,8
- Used to clarify a negative, equivocal or technically difficult ultrasound in the presence of continued clinical suspicion of acute cholecystitis. 9
- The hallmark of acute cholecystitis (acalculus as well as calculus) is persistent gall bladder non-visualisation 30 minutes post morphine or on the 3-4 hour delayed image. 9
- False positives can occur in alcoholics, intensive care unit patients, patients on prolonged fasting, cystic fibrosis and chronic cholecystitis. 10
- Morphine augmentation reduces false positives and is superior to delayed imaging. 11-13
- In critically ill patients in whom acalculous cholecystitis is suggested on US, Tc-IDA scan with pretreatment Cholecystokinin to empty gallbladder prior to Tc-IDA scan, or percutaneous cholecystostomy may be indicated.
- Post treatment Cholecystokinin can be used to evaluate gallbladder function in chronic cholecystitis. 14
- Limitations: longer examination time, unreliable in severe hepatocellular disease or at serum bilirubin levels >340-500 mmol/L, and inability to diagnose extra-biliary causes of acute right upper quadrant abdominal pain and to provide anatomical information. 9

Other Imaging

- Endoscopy or Barium studies may be indicated in certain patients to identify alternative diagnoses which may clinically simulate acute cholecystitis.

Computed Tomography

- CT is useful when the clinical picture is non-specific as it can detect other intra-abdominal inflammatory processes, and when complications of acute cholecystitis are suspected. 16
- Sensitivities for CT diagnosis of acute cholecystitis have not been established due to the lack of prospective studies
- CT features of acute cholecystitis include 16,17
    - Pericholecystic inflammatory changes, including contrast enhancement of the liver adjacent to the gallbladder, inflammatory stranding of pericholecystic tissues, and pericholecystic fluid.
    - Loss of distinction between walls of the gallbladder and adjacent liver.
    - Gallbladder wall thickening, contrast enhancement.
    - Gallbladder distension.
    - Presence of gallstones.
- Advantages: allows other diagnoses, able to identify complications of acute cholecystitis. 16
- Limitations: exposure to ionising radiation, less sensitive (57%-88%) for detection of gallstones compared to ultrasound. 17, 18, 19

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