



Investigating acute appendicitis

ACUTE APPENDICITIS:

Acute appendicitis comprises 28% of presentations with acute abdominal pain. Clinical assessment may be associated with both false positive and false negative diagnoses of 20%. Although ultrasound scanning may prove definitive, particularly in children or slender patients, technical difficulties may be encountered with ultrasound in those of heavier build. Such patients are in fact optimally imaged by CT, which yields an overall accuracy of 94% for diagnosis of appendicitis. Importantly, a correct alternative diagnosis has been reported in 22% of patients who are CT negative for acute appendicitis, (normal appendix identified). Such alternative conditions, which may mimic appendicitis, include diverticulitis, colitis, ureteric calculus and gynaecologic disease. Unenhanced helical CT may also be definitive in less common acute abdominal presentations including small bowel obstruction, cholecystitis, pancreatitis, intra-abdominal haemorrhage, epiploic appendagitis and Crohn's disease.

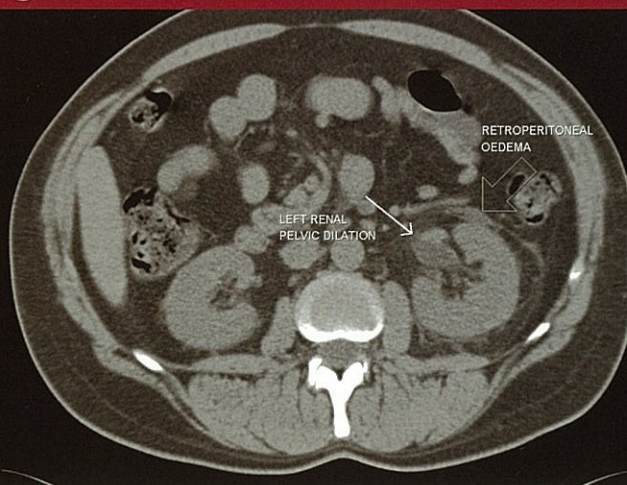
COLONIC DIVERTICULITIS:

Clinical diagnosis of sigmoid diverticulitis may be uncertain or incorrect. CT can accurately identify those patients suitable for conservative management and those with abscess or perforation, who may require active intervention. Right colonic diverticulitis may be clinically indistinguishable from appendicitis, but may require quite different clinical management. These two conditions are readily discriminated by CT. A dilute barium enema may be given as a preliminary to CT for suspected diverticular disease; one study using this technique described a 99% overall accuracy for diagnosis of diverticulitis. An alternative CT diagnosis was made in this study in 58% of those without diverticulitis.

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Management of the Acute Abdomen



MAJOR ADVANTAGES OF UNENHANCED HELICAL CT FOR CLINICAL MANAGEMENT OF THE ACUTE ABDOMEN:

1. A specific diagnosis (including absence of surgical pathology) is obtained in the majority of patients.
2. Clinical confidence in the diagnosis is enhanced.
3. The unenhanced helical CT has the potential to modify the initial clinical diagnosis.
4. A significant change in management may result from the CT findings.
5. Imaging by CT is rapid, accurate and safe.

REFERENCES:

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Dr Tony Lawson

Applications of Unenhanced Helical CT in the Acute Abdomen:

RENAL COLIC:

Several imaging tests have competed in the past for reaching a diagnosis of ureteric colic where the presentation is acute flank pain. Plain Radiography is only 50% sensitive for ureteric calculi. Ultrasound is both insensitive for detection of ureteric calculi and relatively inaccurate for measurement of calculus size (when detected). Indirect ultrasound findings of ureteric colic (dilatation, increased renal arterial doppler resistive index, absent ureteric jet at the vesicoureteric junction) have been

shown to be of limited value. The range of alternative diagnoses detectable by ultrasound is less than achievable by CT. Intravenous Urography although a good test, suffers from several limitations including the small risk of reaction to iodinated contrast medium and the time taken to achieve diagnosis (often several hours). Radiolucent calculi may not be detectable at intravenous urography, and incomplete obstruction may compromise accuracy of the urogram.

Unenhanced Helical CT has evolved to

become the "Gold Standard" for diagnosis of ureteric colic. The test has an overall accuracy of 97%, and is a better technique for diagnosing ureteral calculi than all previous imaging studies. Scanning is rapid and can be achieved in less than 5 minutes. Virtually all stones have a high enough attenuation for detection by CT, and accurate measurement is possible: 98% of ureteric calculi 4 mm or less in diameter will almost invariably undergo spontaneous passage. Several secondary CT signs add confidence to the diagnosis of ureteric colic.

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