

# Diagnostic imaging of the acute abdomen

The fundamental imaging methods of the acute abdomen are the native abdominal imaging and the abdominal ultrasound.

## Radiography

### Native abdominal imaging

Native abdominal imaging is one of the basic examination methods for suspected acute abdomen. The image is taken standing up with a horizontal beam. If the patient cannot stand up, a picture is taken lying down on his side (horizontal beam) and on his back. In the picture we can display:

- pneumoperitoneum: most often seen on the diaphragm in a standing up picture,
- ileus: fluid levels in the intestinal loops, loop distension,
- contours of parenchymal organs, bladder,
- nephrolithiasis,
- contrast foreign bodies: metal clamps (postoperatively), tablets, stents in blood vessels.

## Fluoroscopy

### GIT passage

In patients with a mild passage disorder, examination of the passage by the gastrointestinal tract can be added. Iodine contrast medium (Telebrix ) is administered orally (or by a sonde) and its passage through the parts of the gastrointestinal tract is monitored at time intervals. If the patient has a nasojejunal or nasogastric sonde, it must remain closed during the examination.

## Ultrasound

One of the basic examination methods in patients with suspected acute abdomen. Causes of abdominal pain that ultrasound may show include:

- cholecystitis and cholelithiasis, biliary dilatation,
- urolithiasis (reliably up to 5 mm), dilatation of the hollow kidney system; pyelonephritis can be detected only at an advanced stage and even then it is rather difficult to detect,
- intestinal inflammation: colitis, enteritis, non-specific intestinal inflammation, diverticulitis, appendicitis,
- pancreatitis: imaging of leakage along the pancreas, enlargement of the pancreas, fluid collection; (however, ultrasound is not very reliable in the diagnosis of pancreatitis)
- tumors,
- dilatation of intestinal loops with fluid in the ileum,
- fluid in the abdomen - for various reasons.

## Computed tomography - CT

CT is performed only if ultrasound, native abdominal imaging, clinical and laboratory tests do not clarify the cause of the problem, or if the results do not correspond, as well as in patients who cannot be well examined by an ultrasound.

Following types of CT can be performed:

- CT of the abdomen with oral administration of a contrast medium, in most cases,
- CT of the abdomen without oral administration of a contrast medium, in patients in urgent need of examination, in case of bleeding into the GIT, suspicion of vascular ileus (examination in the arterial and venous phase),
- CT A without oral administration of a contrast medium, when there is a suspicion of an active bleeding or an artery occlusion,
- native CT of the abdomen to rule out urolithiasis, pneumoperitoneum (in case of unclear findings on the native image).

Before the administration of the iodine contrast medium, it is necessary to ask the patient, whether he is allergic to the contrast medium and it is also advised to ask, when was the patients last meal.

## Magnetic resonance imaging - MRI

Apart from MRCP (magnetic resonance cholangiopancreatography), there is no other immediate indication for MR.

# Links

## External links

- Pictures at atlas.mudr.org (<http://atlas.mudr.org>)
- Classification and tables in radiodiagnostics at mudr.org (<http://www.mudr.org/web/>)