

# Perforation

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The erect chest x-ray (CXR) is the ideal first test for hollow organ perforation and as little as 10–20 mL of free air can be detected under the diaphragm ( Figures 8.37 and 8.38 ). About 10 minutes should be left between sitting the patient upright and taking the film to allow time for air to rise; the free air must be sought under the right hemidiaphragm to prevent misinterpretation of the gastric air bubble; and the reviewer must be able to recognise Chilaiditi's syndrome, the harmless and asymptomatic interposition of large bowel between the liver and diaphragm. Caution must also be exercised in interpreting any free air in the context of recent abdominal surgery , as postoperative air can persist for up to 5–7 days in the peritoneal cavity . If the erect CXR is equivocal or a possible walled-off perforation is suspected, a CT is the optimal modality , which may show tiny quantities of free air but may also show the cause, e.g. peptic ulcer, diverticulitis or a neoplastic lesion. As with suspected obstruction, oral or rectal contrast is unnecessary if perforation is suspected as making the diagnosis should prompt appropriate management even if the precise site of perforation is not identified. Also, it cannot be overstressed that if there is any possibility of a leak from the gastrointestinal tract (GIT) barium is absolutely contraindicated as it can induce a serious and potentially fatal peritonitis. Perforation

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