

# Metastases

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The demonstration of metastatic disease will usually significantly affect surgical management. Modern cross-sectional imaging has greatly improved the detection of metastases, but occult lesions will be overlooked in between 10% and 30% of patients. CT is the most sensitive technique for the detection of lung deposits, although the decision to perform CT will depend on the site of the primary tumour, its likelihood of intra-pulmonary spread and the effect on staging and subsequent therapy of the demonstration of intrapulmonary deposits. Ultrasound and CT are most frequently used to detect liver metastases. Contrast-enhanced CT can detect most lesions  $\geq 1$  cm, although accuracy rates vary with the greater than 1 cm technique used and range from 70% to 90%. Recent studies suggest that MRI may be more accurate than CT in demonstrating metastatic disease. Preoperative identification of the segment of the liver involved can be determined by translation of the segmental surgical anatomy, as defined by Couinaud, to the cross-sectional CT images ( Figure 8.42 ). The technique of PET/CT with FDG, an analogue of glucose, is becoming a powerful tool in oncological imaging. This functional and anatomical imaging technique reflects tumour metabolism and allows the detection of otherwise occult metastases. The most common indications for PET/CT have been staging of lymphoma, lung cancer, particularly non-small cell lung cancer, and preoperative assessment of potentially resectable liver metastases, such as colorectal carcinoma metastases ( Figure 8.43 ). Intraoperative ultrasound is an additional method of staging that provides superb high-resolution imaging of sub-centimetre liver nodules that may not be palpable at surgery. This is often used immediately prior to resection of liver metastases.

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