

Investigation

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The diagnosis of acute appendicitis is essentially clinical; however, a decision to operate based on clinical suspicion alone can lead to the removal of a normal appendix in 15–30% of cases. The premise that it is better to remove a normal appendix than to delay diagnosis does not stand up to close scrutiny, particularly in the elderly. A number of clinical and laboratory-based scoring systems have been devised to assist diagnosis. The most widely used is the Alvarado score (Table 76.2). A score of 7 or more is strongly predictive of acute appendicitis. In patients with an equivocal score (5 or 6), abdominal ultrasonography or contrast-enhanced CT examination further reduces the rate of negative appendicectomy. Abdominal ultrasonography is more useful in children and thin adults, particularly if gynaecological pathology is suspected, with a diagnostic accuracy in excess of 90% (Figure 76.8). Modern CT is both sensitive and specific (approximately 95%) in the diagnosis of acute appendicitis (Figure 76.9) and worldwide there has been a steady increase in its use for this purpose. CT has been shown to reduce the rate of negative appendicectomy without an associated increased perforation rate (due to delay in diagnosis) and may be cost-effective as a result of shorter hospital stay. While the diagnostic accuracy of modern CT scanning for appendicitis is well established, radiation exposure and the theoretical carcinogenic effect are a concern. Low-dose protocols, which reduce the radiation dose to the patient by up to 80%, can be as reliable as standard dose scanning and may be more appropriately applied when considering a diagnosis of acute appendicitis, particularly in the younger adult. Contrast-enhanced standard dose CT is especially useful in patients in whom there is diagnostic uncertainty, particularly older patients, where acute diverticulitis, intestinal obstruction and neoplasm are likely differential diagnoses.

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