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| **2R — Appendicectomy without confirmation of appendicitis** |
| **Summary of Intervention** |
| Appendicitis is the most common cause of abdominal pain requiring surgical intervention.  In children appendicitis can often be diagnosed clinically, if there is diagnostic uncertainty, an ultrasound can confirm appendicitis. CT is not recommended in children given the risks of ionising radiation; MRI can be used in centres with appropriate expertise.  In adults negative appendicectomy can occur in up to 30% of cases where appendicitis is suspected on clinical grounds but imaging is not performed.  In patients with typical symptoms, diagnosis can generally be made based on history, physical examination and blood analysis. The ‘triple-screen’ (CRP <10, WCC <10.5 and a neutrophil percentage <75%) has a negative predictive  value >99% in excluding appendicitis, and imaging for appendicitis is not recommended in this setting.  Recent studies have shown there is a potential role for non-operative management of acute appendicitis, imaging can help identify which patients could be managed conservatively.  Where patients present with atypical or equivocal symptoms, imaging should be sought to reduce the negative appendicectomy rate. While both ultrasound and computed tomography (CT) are effective, ultrasound is  preferred as a first-line investigation. This is particularly important in young patients or in female patients when there is a significant incidence of a gynaecological differential diagnosis (where US is superior to CT). CT may be  more appropriate in obese patients where ultrasound is more challenging, or for older patients in whom the differential diagnosis may be broad and where CT is usually of more value.  The diagnostic accuracy of MRI to diagnose appendicitis is similar to CT. Where specialist MRI is available it can be considered if CT is contraindicated, it is particularly useful for pregnant patients.  **This guidance applies to adults and children.** |
| **Number of interventions in 18/19** |
| **47,605** |
| **Proposal** |
| Consider imaging of patients with the suspicion of acute appendicitis in a defined clinical pathway. Where patients present with a high clinical suspicion of appendicitis, then imaging may not be necessary, but imaging can help identify which patients can be managed conservatively. If there is clinical doubt then imaging can reduce the negative appendicectomy rate. Most patients should have an ultrasound as the first-line investigation. If the diagnosis remains equivocal, a contrast-enhanced CT (CECT, preferably low dose) can be performed to give  a definitive diagnosis prior to the patient returning to the surgical unit for a decision on management.  A pathway like this is dependent on the availability of an adequately skilled Radiologist (Consultant or Registrar) or Sonographer to perform the ultrasound assessment in a timely fashion. If this is not possible discretion should be used to proceed directly to limited dose CECT of the abdomen and pelvis. |
| **Rationale for Recommendation** |
| Appendicitis is a common surgical emergency. In many cases, typical history and physical examination are sufficient to reach a clinical diagnosis of appendicitis. However, patients can have a negative appendicectomy so there is a role for imaging if there is any diagnostic doubt (some reports suggest this is a more cost-effective way of managing suspected appendicitis), imaging can also help identify which patients can be managed conservatively. Where imaging is indicated, ultrasound is considered the preferred first-line diagnostic intervention followed by a conditional CECT after an inconclusive ultrasound. MRI, while having a comparable accuracy to CECT, has played a limited role in diagnosis of appendicitis due to scanner access. However, the lack of ionising radiation makes it a safer option for younger or pregnant patients with an inconclusive ultrasound (where there is appropriate access and expertise). |
| **References** |
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