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INTRODUCTION

Abdominal radiography (AXR) constitutes part of the routine work up of patients presenting to the emergency department (ED) with acute abdominal pain.

Imaging guidelines from the Royal College of Radiologists (UK)¹ state AXR as an investigation for specific suspected diagnoses. The American College of Radiology² appropriateness criteria state AXR 'may be appropriate'.

Our experience from a busy university teaching hospital suggests that AXR often makes no significant difference in the management of these patients who frequently go on to have further imaging with other modalities. Consideration must be made of a significant radiation dose (1mSV) particularly in a younger cohort of patients who make up this group, but also the cost of unnecessary imaging and delayed time to final diagnosis.



Example of AXR reported as normal (1a), patient went on to have computed tomography (CT) (1b) which demonstrates small bowel obstruction.

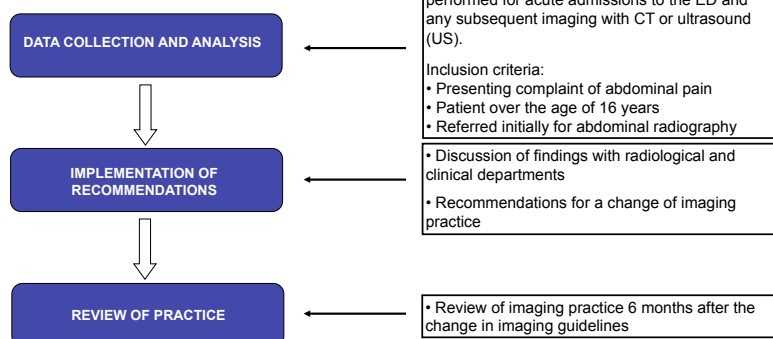


Example of AXR reported as abnormal (2a) showing gallstone ileus, however the clinical team still requested a CT which confirmed the initial diagnosis (2b).

AIMS

1. To evaluate the efficacy of abdominal radiography in the assessment of acute abdominal pain.
2. To provide evidence for a change of imaging practice within our institution.
3. To review the effectiveness of our recommendations.

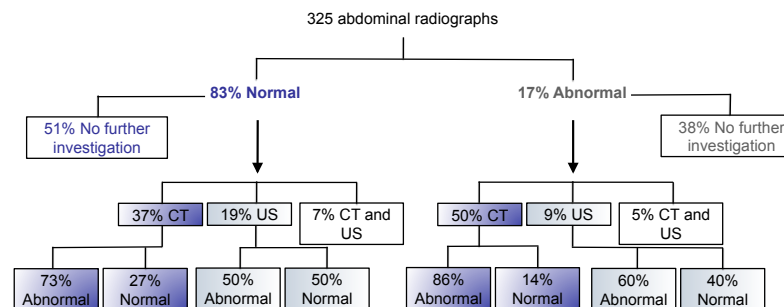
METHODS



1. The Royal College of Radiologists . Making the best use of clinical radiology services, Referral guidelines, 6th edition, 2007
2. American College of Radiology, Appropriateness Criteria, Acute abdominal pain, 2008

RESULTS

1. Evaluation of the efficacy of abdominal radiography in the assessment of acute abdominal pain



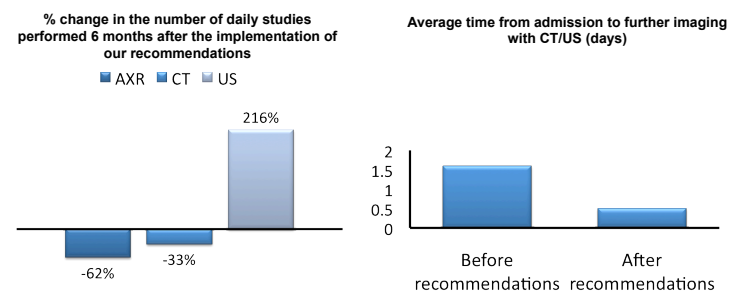
2. Summary of the findings:

1. Abdominal radiography is a standard clinical investigation but it is neither sensitive nor specific in the management of the acute abdomen.
2. Irrespective of the results of abdominal radiography, approximately half of the patients will have further imaging with CT and US, in which a high percentage is usually abnormal.
3. These further imaging tests are performed on average over 24 hours after the initial presentation. During this time the patients have left the emergency department and been admitted to the hospital wards. This has significant cost implications for overnight admissions and places pressure on hospital infrastructure.

3. Recommendations for changing imaging practice (shared with the Departments of Surgery and General Medicine):

1. An US service should be provided in the ED during daytime hours.
2. Clinicians are advised firstly to decide if any imaging is actually required. Secondly AXR should be avoided and the most appropriate imaging modality should be chosen. This decision should ideally be made by an experienced clinician.

4. Review of imaging practice 6 months after the change in imaging guidelines



CONCLUSIONS

- Abdominal radiography plays a limited role in the work up of the patient with the acute abdomen and should be replaced by other modalities. CT and US are more sensitive and more likely to provide an accurate diagnosis.
- The risk is that abdominal radiography may simply be replaced by CT and to this end referral patterns and activity are being monitored.