Ambulatory USS: Could we be more efficient?

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INTRODUCTION

Right iliac fossa (RIF) pain is one of the most common presentations to the emergency surgical take, with a multitude of pathologies including surgical, urological and gynaecological.

Raised inflammatory markers (white cell count and C-reactive Protein) have a sensitivity of >95% in the diagnosis of appendicitis[1,2,3]. However, in cases with a short history, a lag in inflammatory markers may be seen, especially CRP.

Although appendicitis is still a clinical diagnosis, **imaging can be performed when the diagnosis is unclear.**

Ultrasound (USS) plays a useful role in identifying other causes of RIF pain, however, in the diagnosis of appendicitis has a **sensitivity and specificity rate of 86% and 81%** respectively[4,5]. A more accurate tool in diagnosing appendicitis is the CT scan which has a sensitivity of 94% and specificity of 95%[5].

Patients assessed in an acute surgical unit with an atypical history, no peritonism and normal inflammatory markers may be suitable for a planned ambulatory care admission to a **'Hot Clinic'** for USS.

AIMS

Currently at our trust we have a limited number of daily 20 minute slots for either an abdominal or pelvic USS, but **are we using these slots efficiently?**

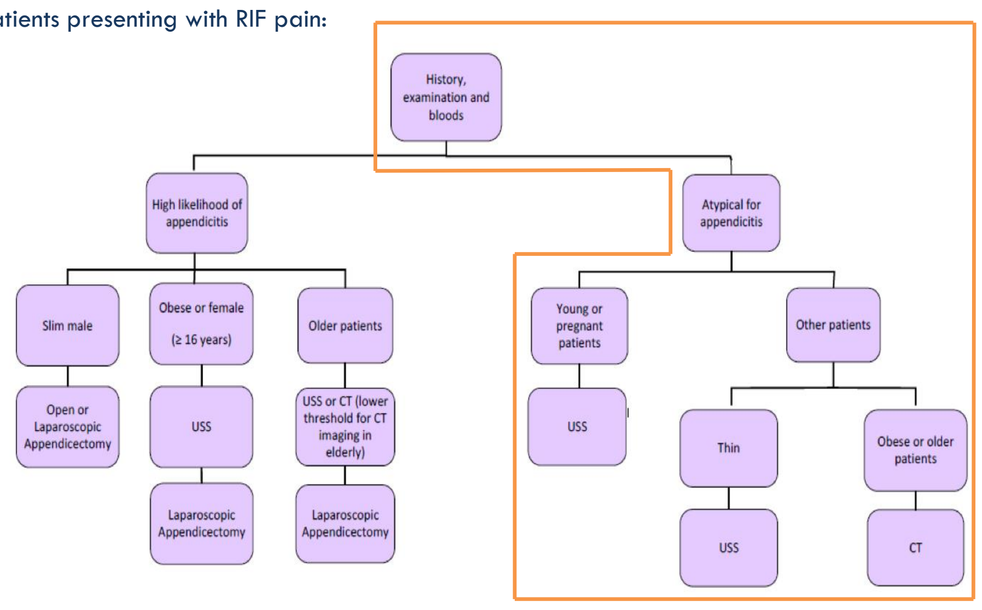
Should we be considering the **reassessment** of these patients in ambulatory care +/- repeat bloods before using a scan slot?

If appendicitis is our main differential, **is USS the best way to investigate** these patients as opposed to CT scanning or proceeding with a diagnostic laparoscopy?

METHOD

We used The Emergency General Surgery Commissioning Guide [6] from NICE, RCS Eng and ASGBI as a standard to compare against. We looked at patients with an atypical history who were brought back to our Hot Clinic.

Patients presenting with RIF pain:

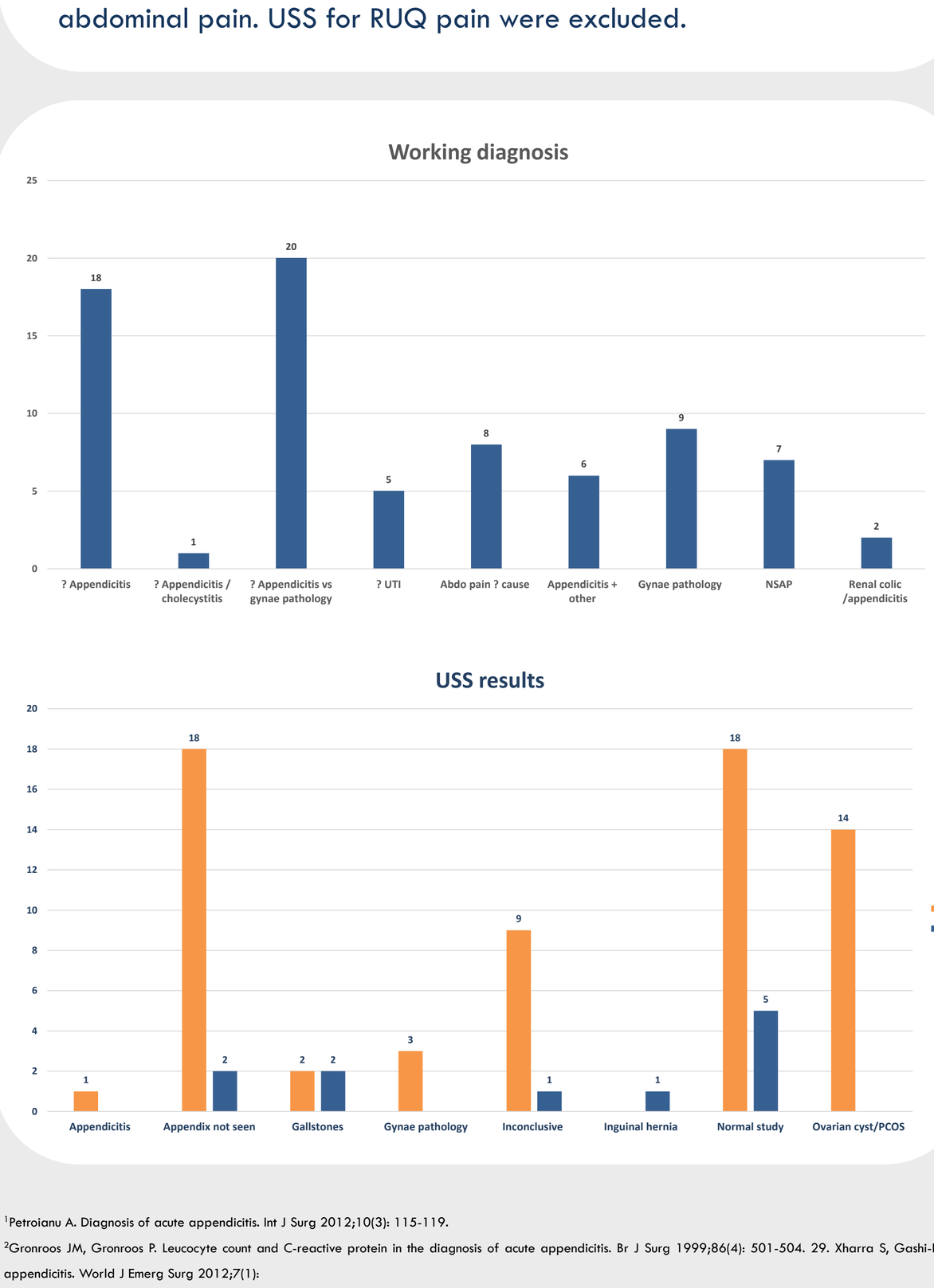


In summary:

- **If patient female and < 40 years, pregnant or slim: USS**
- **If > 40 years or obese: CT**
- **If a young slim male: no imaging required**

Data was collected over a 6-month period from June 2019-December 2019.

We used the Hot Clinic attendance book and reviewed patients presenting in this time period who had an USS for RIF/lower abdominal pain. USS for RUQ pain were excluded.



RESULTS

76 patients included 65 females and 11 Males.

Most presentations were RIF/RLQ pain for varying amounts of time. Symptoms also included epigastric pain, generalised abdominal pain and pain +/- PV bleeding.

The WCC was normal in 78% and CRP <5 in 68%.

The majority of working diagnoses were either ?appendicitis (18) or ?appendicitis vs gynae pathology (20).

We found that **most patients were having both abdominal and pelvic USS** (34). 12 patients had abdominal, pelvic and transvaginal; 24 patients had pelvic USS alone, of which 3 were male; and 6 patients had abdominal USS alone .

Most of the USS request information was looking for appendicitis vs gynaecological pathology (25), 14 requests were for ?appendicitis and 12 just requested as "RIF pain".

23 USS were reported as normal and 10 were inconclusive. 1 patient was diagnosed with appendicitis using USS however a CT scan later confirmed colitis instead. The **appendix was not visualised in 20 patients**. 14 were found to have an ovarian cyst, 3 had another gynaecological problem. 4 patients had gallstones and 1 had an inguinal hernia.

12 patients required further investigation following USS. 7 of these were not discharged immediately and required inpatient hospital stays.

Of the 12 patients, 5 had CT scans – 2 OP, 3 IP. 1 CT showed right sided colitis, 2 were normal and 2 required an MRI under gynaecology.

2 patients underwent diagnostic laparoscopies, both of which resulted in an appendicectomy which was histologically normal. 3 patients represented at a later date with similar RIF pain.

31 patients (41%) had matching working diagnoses to USS request.

Only 10 patients (13%) were given working diagnoses which correlated with USS findings.

CONCLUSION

Comparing against The Emergency General Surgery Commissioning Guide we found in our unit:

- All males presenting (11) had an USS, 10 of which were <40 years
- 14 patient > 40 years old had an USS
- Most patients had abdominal and pelvic USS despite lower abdominal pathology queries
- Majority of scans - normal / appendix not visualised
- Some patients with a long history and normal bloods received hot clinic scans when these patients could have been brought back for a reassessment or could have an outpatient scan

Our **recommendations** from this audit were that :

- USS should only be used in **women of childbearing age to identify gynaecological causes** of RIF pain
- **Pelvic USS** should be used instead of abdominal USS for **lower abdominal pain**
- **Hot Clinic USS slots** should be reserved for males with **biliary concerns**

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