The Diagnosis and Management of Appendicitis During the COVID-19 Pandemic: The Pennine Acute Trust Experience.

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Introduction

The new Coronavirus disease (COVID 19) has severely impacted healthcare systems across the globe since being declared a pandemic on March 11 2020.

This has placed a great strain on the healthcare system, and the ability to run an effective surgical department.

Attesting to this increased strain on the healthcare service, recommendations came from the four royal colleges, EAES, ALSGBI, UGIS, ACPGBI among numerous other organizations recommending an initial suspension in elective and non urgent surgery to help ease this pressure.

In conjunction with this, theoretical concerns had been raised about the aerosol generating potential of laparoscopic surgery at the beginning of the pandemic. The difference in risk between open vs laparoscopic surgery is uncertain but with other viruses present in surgical smoke the advice, reasonably, was to avoid laparoscopic surgery where able to.

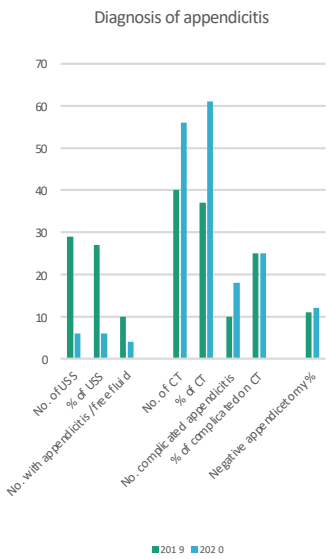
Initial Intercollegiate General Surgery guidance advised where possible non-operative management or open appendectomies for early and/or uncomplicated appendicitis. The aim of this study is to compare presentation, treatment, outcomes and postoperative complications in patient presenting with appendicitis. Did COVID 19 caused any alteration to patient's management and did patients present later with increased severity?

Methods

We conducted a multi centre retrospective observational study on patients with a diagnosis of appendicitis. Data was gathered from Royal Oldham hospital and North Manchester general hospital. We classified patients into 2 groups; Group 1 looking at patients who presented to both hospitals with appendicitis February - April 2019 and Group 2 looking at patients presenting February - April 2020 .

These dates were chosen to include time before and after lockdown was imposed in the UK on the 23rd of March 2020 and to compare this against the same period one year earlier.

We collected data on demographics, blood results, imaging performed, intervention undertaken, duration of symptoms prior to presentation, time until surgery, length of stay, antibiotic course length, complications and readmission, and where applicable, COVID status.



Results

In 2020, 91 patients were identified (mean 33, range 6-85, F:M 1:1.4). In 2019, 107 patients were identified (mean 32, range 7-69, M:F 1:1.1). There was no significant difference in patients' symptom duration (p=0.21), White Cell Count (p=0.20) or C-Reactive Protein (p=0.10).

More CTs were performed in 2020 (56/91, 61.5%) than in 2019 (40/107, 37.4%). Less patients underwent appendicectomy in 2020 (75/91, 82.4%) than in 2019 (104/107, 97.2%). Open appendicectomies were performed in 64% (48/75) of those operated in 2020 compared with 12.2% (13/104) in 2019. There was no difference in hospital length of stay or re-admissions rates.

Discussion

We can see from the data collected that there was no negative impact found on patients' treatment during the early days of the COVID period at our trust . More reliance was placed on CT imaging due to bed and theatre capacity issues. his allowed more people to be suitably treated conservatively but didn't translate into a lower negative appendectomy rate, being 11% and 12% for 2020 and 2019 respectively. Early guidance that all procedures were to be performed openly didn't equate to increased complication or a significant difference in hospital stays. Limitations would be that this study only looked until the end of April with the UK in a national lockdown until the end of May. With the likelihood of a second wave it's possible that diagnosis of appendicitis will rely on imaging more in the future, regardless of age.

Table 1. Management of appendicitis .

	2019	2020
No. of Operations	104	75
% of patients operated	97%	82%
Total No. abscesses or perforation	29	24
No. Laparoscopic	86	27
No. open	13	48
No. conversions	5	0
No. conservative	3	16

Conclusions

The diagnosis and management of appendicitis changed considerably at our trust during COVID-19 with more reliance on CT diagnosis and less use of laparoscopy. Despite this, outcomes remained unchanged.

References

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