

# Cost effectiveness of Appendicitis management in COVID period

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## Introduction

- Acute appendicitis is the most common cause of acute abdominal pain
- Appendicectomy gold standard treatment
  - Open appendicectomy (1735)
  - Laparoscopic appendicectomy (1983)
- The COVID-19 pandemic has deemed aerosol generating procedures (appendicectomy) as high risk procedure, therefore antibiotic treatment is recommended (Government guidelines).
- Aim of the study is to evaluate the management of appendicitis since COVID lockdown in our institution.

## Materials & Methods

- Retrospective study on appendicitis admissions since April to October 2020
- 5 consultant surgeons
- Inclusion criteria: all appendicitis patients
- Exclusion criteria: children < 8 years, pregnant women
- Admission COVID tests all patients (pre-operative)
- Appendicectomy (open / laparoscopic)
- Safety precautions:
  - use of full PPE (goggles, visor, FFP3 mask, body protective garb), laminar flow theatres, aerosol + smoke dispersal filters, traps, smoke evacuators as well as avoidance of 2-way pneumoperitoneum insufflators, minimization of electrocautery use, minimum abdominal insufflation pressure, carefully abdominal disinflation (air filters)
- Statistical testing (Graph Pad Prism)

## Results

	Conservative (n = 63)	Surgical (n = 28)	Mann-Whitney U test p value
Age (yrs)	33.4 ± 2.5	36.5 ± 4.1	NS
Sex (M:F)	37 : 26	14 : 14	NS
Weight (kg)	73.5 ± 2.6	74.0 ± 3.9	NS
BMI (kg/m <sup>2</sup> )	25.7 ± 0.8	25.1 ± 0.9	NS
GP : A & E (Admissions) (n)	12 : 51	10 : 18	NS
ASA (median ± IQR)		1 ± 0.5	
Uncomplicated appendicitis (n)	55	9	< 0.05
Complicated appendicitis (n)	8	19	< 0.05
Readmission (n)	8	0	(< 0.05, $\chi^2$ test)
Failed conservative (n)	10	10	(< 0.05, $\chi^2$ test)
Perforation (n)	2	10	< 0.05
Appendicolith (n)	8	15	< 0.05
No imaging (n)	5	2	NS
USS scan (n)	27	6	NS
CT scan (n)	31	20	NS
WCC (mg/L)	12.0 ± 0.5	15.5 ± 3.2	NS
CRP (x10 <sup>9</sup> /L)	63.3 ± 8.7	71.9 ± 17.7	NS
Operation time (mins)		80.5 ± 6.4	
LOS (days) (med ± IQR)	2 ± 0.5	2 ± 1	NS
Intravenous AB's (days)	2 ± 1	2 ± 1.5	NS
Oral AB's (days)	7 ± 1	5 ± 1	< 0.05
Open (n)		2	
Laparoscopic (n)		25	
Lap-open (n)		1	
Length appendix HPA (mm)		73.2 ± 4.8	
Diameter appendicitis HPA (mm)		12.0 ± 0.8	

## Discussion

- Uncomplicated appendicitis can be treated with antibiotics
- Complicated appendicitis requires early surgical intervention
- Cost of appendicectomy in appendicitis:
  - acute admission (antibiotic therapy, surgery, LOS), & potential complications.
- Cost of conservative management of appendicitis should include:
  - acute admission,
  - prolonged period of antibiotic therapy,
  - potential readmissions,
  - failed conservative treatments,
  - delayed managements (further radiological imaging),
  - endoscopy evaluation of colon, surgical outpatient review,
  - delayed appendicectomy), prolonged “work affected” sickness.

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