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Acute appendicitis during SARS-CoV-2: A brief communication of patients and changes in clinical practice from a single institute in Pakistan

Dear Editor,

We read the paper “Limiting hospital resources for acute appendicitis in children: Lessons learned from the U.S. epicenter of the COVID-19 pandemic” by Dr. Charlotte L Kvasnovsky and colleagues [1] with great interest and would like to comment on our institutional experience with regards to the management of pediatric patients presenting to our center with acute appendicitis during SARS-CoV-2.

The policies for managing pediatric surgery patients were developed by surgical and anesthesia teams collectively with consultations from our hospital’s infectious diseases (ID) department, and the following principles were implemented:

- 1) All elective surgical procedures were suspended to preserve hospital workforce and maintain sufficient capacity to deal with any surge in SARS-CoV-2 cases.
- 2) In order to protect both the patients and the healthcare staff, tele-medicine clinics were introduced. Only those patients who required post-operative evaluation were seen in the out-patient clinic.
- 3) The patients and their caregivers were screened for SARS-CoV-2, according to the protocol designated by the hospital’s ID team, prior to their visit to the hospital and on arrival to the clinic.
- 4) In children who exhibited no clinical or radiological indication, of complicated appendicitis, they were given an intravenous trial of antibiotics - as an alternative to surgery.

In the past 2 months since these policies were implemented, the pediatric surgery team has managed twelve patients- their details given in Table 1. The mean age of the patients was 8.8 years (1.5–14), mean time between the development of symptoms of appendicitis and receiving medical treatment was 3.3 days (1–7), and mean length of hospital admission 6.6 days (0–20). We found 3 (25%) of the managed patients were positive for SARS-CoV-2 on PCR test. It is worthwhile to note that 7 (58.3%) of the patients presented with a perforated appendix- the highest percentage observed in a cohort of patients over a two-month timespan at our hospital. This is a significant increase from the prior years.

However, significant challenges were faced while implementing these policies. These included:

- 1) A decrease in volume of patients operated because of:
 - a) Lockdown policies restricting access to the hospital
 - b) Fear of an epidemiological SARS-CoV-2 infection while visiting the hospital - resulting in a greater incidence of complicated cases.
 - c) Reduction in operation theatre slots to preserve our healthcare workforce (6 slots per week to 2 slots per week)

- 2) Patients leaving the hospital against medical advice when counselled regarding the policy of mandatory SARS-CoV-2 testing prior to surgery. Three patients Left Against Medical Advice after having a confirmed diagnosis of acute appendicitis. This comes amidst fear of getting positive SARS-CoV-2 test and the stigma associated with it.
- 3) A decrease in patients seen in the tele-clinics because of scarce access to necessary technology to schedule an appointment, e.g. internet, laptop and smart phones.

Amidst all these challenges, the entire workforce is doing its best to continue delivering quality healthcare to patients and we hope this pandemic is soon resolved. However, once the crisis is over, it is projected that there will be a significant need for funds to revert the hospital to its initial status. Unfortunately, this will likely translate into further reduction in research funding and diminished scientific activity.

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- [1] Kvasnovsky CL, Shi Y, Rich BS, et al. Limiting hospital resources for acute appendicitis in children: Lessons learned from the U.S. epicenter of the COVID-19 pandemic. *J Pediatr Surg.* 2020;01–5. <https://doi.org/10.1016/j.jpedsurg.2020.06.024>.

Table 1
Patient characteristics.*

Patient Number	Age (years)	Duration of symptoms prior to surgery (days)	SARS-CoV-2 test results +	Status of appendix perforation	Mode of treatment	Length of hospital stay (days)
1	9	7	Negative	Perforated	Open surgery	20
2	14	3	Positive	Perforated	Open surgery	8
3	1.5	4	Negative	Perforated	Open surgery	7
4	9	5	Negative	Perforated	Open surgery	12
5	10	4	Negative	Perforated	Open surgery	7
6	11	4	Negative	Perforated	Laparoscopic	7
7	4	5	Negative	Perforated	Open surgery	9
8	14	1	Negative	Non-perforated	Laparoscopic	1
9	13	1	Negative	Non-perforated	Open surgery	2
10	7	1	Positive	Non-perforated	Conservative	0
11	9	2	Positive	Non-perforated	Conservative	4
12	5	2	Negative	Non-perforated	Open surgery	2

* Patients sorted on the basis of perforation status.

+ Patients with a positive SARS-CoV-2 test have been put in bold.