



Children's Hospital Colorado

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Department of Pediatric Surgery

MEMO

Divis
Thor

Pedi To: Pediatric Surgeons, Fellows, and Advanced Practice Providers
Shan From: Tom Inge, David Partrick, and Steve Moulton
John Date: March 21, 2020
Deni RE: Coronavirus response-Appendicitis treatment considerations
Andr
Davi
Jenn

Luis Happy Saturday,

Jose Our most common non-elective case is appendectomy, so as the number of COVID-19
Fred cases increase in the region, we should have a game plan for work-up and treatment of
Ann pediatric patients with appendicitis and COVID-19.
Ken

Stevi TREATMENT OF EARLY, NONCOMPLICATED APPENDICITIS WITH COVID-19 DISEASE:
Davi

Albe We have traditionally used surgical treatment for early, uncomplicated appendicitis.
Jona However, evidence shows that non-operative management has been successful in
Stig many of these patients. We have to assume that non-operative treatment may also be
Katie successful in those patients with appendicitis and COVID-19. Offering non-operative
Pedi treatment would reduce SARS-CoV-2 exposures and consumption of PPE in patients
Moh with COVID-19 or in persons under investigation (PUI) for COVID-19. Importantly, I
S. Ch have learned today that CHCO's in-house PCR is often getting COVID results back to us
Ama within several hours, and routinely within 6-12h, although supplies of reagents may be
Step in flux. There is some consideration for testing of all surgical patients preoperatively,
Sara provided their operation can wait for the test results and is not a truly "stat
Ryan emergency."
Niti
John

Adv **So for now, for ALL patients with early appendicitis who are PUI:** The patient should
Justi be treated with IV antibiotics at the diagnosis of appendicitis (as usual) and rapid
Rach testing for COVID-19 should be requested.
Melc

- If COVID-19 testing is positive, the pediatric surgeon on duty should provide direction to the team about continuing the non-surgical treatment option. She or he will review the particulars of the presentation and clinical/imaging data for inclusion and exclusion criteria (see algorithm in appendix of this Memo).
- If COVID-19 testing is negative, the pediatric surgeon on duty can proceed with operative or non-operative management depending on the overall assessment of the patient and taking into account the family's wishes. Providers who are consenting families for treatment of early appendicitis who meet criteria for non-operative management should be well-versed on outcomes, risks, and benefits of operative and non-operative treatment options.

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In terms of practical guidance, the attached document is a non-operative treatment protocol, including what to count as success, discharge instructions, and what to do when/if there is failure of non-operative management.

Although non-op management has been the preferred option for many years in some pediatric centers, if we begin offering and using this protocol in our COVID-19 patients, we will need a reliable follow up mechanism, due to the higher failure rate with non-operative management. That should involve at a minimum a call at 24h after hospital discharge and again at 5-7 days. We are creating an EPIC list for these cases for now, so they can be tracked, and managed.

We should proceed with this general plan for now, and we will need to talk next week to fully operationalize the follow-up component.

GUIDANCE FOR TREATMENT OF LATE OR COMPLICATED APPENDICITIS WITH COVID-19 DISEASE:

Particularly when we have a limited supply of PPE, there may be good reasons to delay surgical treatment and even percutaneous drainage in the patient with complicated appendicitis who has COVID-19 or symptoms of/exposures to SARS-CoV-2 (e.g., meets PUI criteria). In this scenario, balancing what is best for the patient along with risks to staff and use of PPE, cooling off with immediate antibiotic treatment and up to a 24h delay in intervention may be reasonable, while viral testing is being done. If determined to have COVID-19, next steps should be guided by careful consideration of severity of the surgical disease (and presence and location of significant fluid collection[s], presence of free appendicolith in abdomen or pelvis), severity of the respiratory disease, and likelihood of control of intra-abdominal sepsis with up-front antibiotics and subsequent drainage or appendectomy. Clearly, these patients with combined surgical and COVID-19 diseases will be difficult to manage by protocol. Consultation with other surgical partners, Infectious Disease colleagues, and Interventional Radiology will be needed.

Note: These general management strategies are based in large part on the availability of rapid SARS-CoV-2 testing. Thus, in the event that available turnaround times are not <24h, the preferred protocol could change.

