

## Non-operative Treatment of Acute Appendicitis in a Patient with Covid-19 Disease.

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**Received:** March 21, 2021; **Published:** March 31, 2021

### Abstract

At the time of virus pandemic of SARS-CoV-2, a patient with Covid-19 disease presented uncomplicated acute appendicitis. The peri-operative mortality in patients with infection of this virus was reported 24%. Pulmonary complications occurred in 51%, and in this group, the mortality was 38%. Other consideration was the risk for health team of contamination with laparoscopic surgeries. After analyzing many aspects, the patient with uncomplicated appendicitis and Covid 19 disease, received non-operative management of appendicitis with good results. Clinical evolution and the image of Computed Tomography of appendix, shows the good result in this case.

**Keywords:** Acute appendicitis; Conservative management and acute appendicitis; Acute appendicitis and covid-19; Non operative management of acute appendicitis; Conservative treatment of acute appendicitis; Antibiotic treatment and acute appendicitis

### Introduction

On March 11, 2020, the World Health Organization declared SARS-CoV-2 virus pandemic (Covid-19 disease). This caused changes in all aspects of life. The health system became at the limit of its possibilities, the mortality caused by the virus infection increased progressively, the health teams became ill and with it the workload increased. The consequences were also observed in an increase of perioperative morbidity and mortality in surgical patients.

In this context, it was recommended to stop elective procedures and only make surgeries that cannot be delayed. Acute appendicitis is a frequent cause of emergency consultation. The gold standard is

an appendectomy, but non-operative treatment for uncomplicated acute appendicitis has been discussed in recent years. We present the case of a patient with Covid-19 pneumonia and acute appendicitis, both verified by clinical picture and image, in which all aspects were analyzed to decrease the risk. Non-operative management was chosen in order to find the best option.

### Material and Methods

We presents a case of 22-year-old male patient, with a BMI 33 Kg/mt<sup>2</sup>, checked in at emergency department with abdominal pain during a period of SRAS-CoV-2 pandemic. He had 24 hours of abdominal pain that increased after food intake, general discomfort

**Citation:** Verónica Azabache Caracciolo and Rodrigo raurich. (2021). Non-operative Treatment of Acute Appendicitis in a Patient with Covid-19 Disease. *Journal of Medical Research and Case Reports* 3(1).

and diarrhea. The patient reported that he started to cough 2 days before.

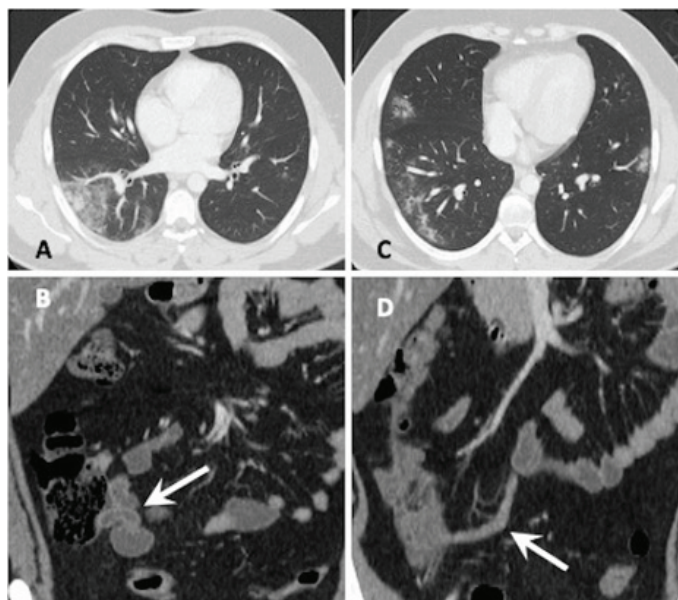
When this patient arrived at the emergency, his temperature was 38.5°C, heart frequency: 100 beats/minute; respiratory frequency 19/minute; O<sub>2</sub> Saturation 95%. The abdomen was distended with marked sensitivity in the lower area with predominance at the right lower quadrant. Laboratory test: With cells: 8560 /mm<sup>3</sup> with normal formula. PCR-RT SARS (+). Computed Tomography of the chest showed: multiple bilateral pulmonary parenchymal opacities and subpleural condensation area in the right lower lobe compatible with Covid-19 pneumonia. Computed Tomography of the abdomen showed: The appendix increased in caliber up to 9 mm, with thickening of its walls and slight inflammation of the surrounding adipose tissue, compatible with uncomplicated acute appendicitis. (Figure 1: A,B).

Because of the presence of Covid-19 disease and knowing the morbidity and mortality associated with respiratory problems in patients under surgery, it was decided to consider non-operative management of appendicitis, informing the patient of the probabilities of treatment failure. Both sides medical and patient agreed, and non-operative management was chosen.

Antibiotic therapy was started, with Ceftriaxone 2 gr. iv / day + Metronidazole 500 mg iv tid. The parameters to control the evolution of appendicitis were: clinical, laboratory and a new radiology test one week after starting the treatment. After 48 hours of the treatment, the patient no longer presented abdominal pain, feeding was resumed and he remained hospitalized only because of COVID-19 disease.

Computed Tomography one week later showed in thorax: Increased occupant injuries to both lungs and partial regression of the lung condensation of the right lower lobe. In abdomen: Normal appearing appendix without inflammatory changes. (Fig1: C, D).

The clinical evolution of the patient was satisfactory for both conditions and did not require surgery for abdominal problem and no intubation to manage Covid-19 disease. The patient was discharged on the 13th day, and continued oral antibiotic treatment with ampicillin-sulbactam (825/125 mg) bid oral for 7 days.



## Discussion

The SARS-CoV-2 virus infection, has extra pulmonary manifestations. The initial clinical presentation may be appendicular syndrome [1], therefore it is very important to check the diagnosis with an image to verify the clinical suspicion of acute appendicitis, especially during this pandemic time. [2].

**Patient risk:** Mortality from the SARS-CoV-2 virus is a major cause of death worldwide. The general perioperative mortality associated with perioperative infection by SARS-CoV-2 virus has been reported close to 24%, (26% in emergency surgery). Pulmonary complications occurred in 51%, and in this group, the mortality was 38% [3].

**Health Team Risk:** Although there is no strong evidence against the infection of health personnel during laparoscopic procedures, studies of spreading through aerosols and gases during endoscopic procedures with Hepatitis B and papilloma virus, suggested that it is a possibility of infection of the health team, especially in pandemic times [4,5]. It has also been suggested as an alternative, to perform procedures by open surgery, but the quality of surgical care also cannot be sacrificed.

Currently, appendectomy is still the primary treatment choice for uncomplicated acute appendicitis because of its low mortality and low rate of recurrence and perforation. However, conservative treatment has shown it is a safe and efficient technique in selected

cases [6]. In pandemic time it seems to be a reasonable alternative for selected patients.

In the case presented, the patient had a clear advantage of benefiting from laparoscopic surgery over open surgery, and he had selection criteria for conservative treatment of uncomplicated acute appendicitis. The presence of fecalith was not in this patient.

When non-operative treatment is decided, the disadvantages must be known by the patient for adequate informed consent. It must be explained that the failure of the treatment is 5% to 20% and the need to perform the surgery in the following 5 years, will be about 40% [7]. In this case, the patient had no hesitation in preferring conservative treatment over surgery because of his risk having Covid-19 disease. Antibiotic treatment is recommended for 7 to 10 days [8]. In this case the time was extended due to the Covid-19 pathology.

The great advantage of opting for non-operative treatment was to decrease the risk of perioperative morbidity and mortality from Covid-19 disease. And, in case of needing subsequent surgery it can be done in better conditions. The health team was protected without diminishing the technical quality of a standard procedure. To the best of our knowledge, this is the first published case with uncomplicated acute appendicitis and Covid-19 disease with non-operative treatment, with evidence of appendicular normalization documented with images, during this pandemic.

## Conclusion

The non-operative management for uncomplicated acute appendicitis, in selected cases of patients with Covid-19, is a good alternative for treatment, when the surgical condition are not the best.

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