



## GASTROINTESTINAL CLINIC IN PEDIATRIC PATIENT AFFECTED BY COVID-19: PRESENTATION OF A CASE

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### ABSTRACT

On December 31, 2019, the People's Republic of China, specifically the Wuhan Municipality, disclosed a group of pneumonia cases of unknown etiology. As several investigations were carried out, the etiological agent, a new coronavirus, became known.<sup>1</sup>

Coronaviruses are viruses that have already affected humans, some are endemic worldwide and can cause up to 10% to 30% of infections at the level of the upper respiratory tract. In the years 2002 and 2012, respectively, we suffered two epidemics worldwide that were caused by these viruses: severe acute respiratory syndrome coronavirus (SARS-CoV) and Middle East respiratory syndrome coronavirus (MERS-CoV), both of which arose from animals. The 2019 coronavirus (SARS CoV-2) is a new virus, specifically betacoronavirus, which belongs to the subgenus sarbecovirus, and a subfamily of Orthocoronavirinae, and the disease it produces is named Covid-19.<sup>2</sup>

On May 15, 2020, the WHO released a scientific report that reports to various groups of children and adolescents in Europe and North America admitted to intensive care units affected by a multisystemic inflammatory picture of typologies analogous to Kawasaki disease and the syndrome of toxic shock. In Ecuador until the first day of the month of July 2020, a total of 37 diagnoses of multisystemic inflammatory syndrome have been reported, which has affected children and adolescents, all associated with the new coronavirus, Covid-19<sup>3</sup>

For all the aforementioned, the case of a pediatric patient affected by Covid-19 is presented, who presented gastrointestinal symptoms and after treatment, overcomes this table.

**Objective:** Describe as the exclusive gastrointestinal clinic, is a form of presentation of Covid-19 infection in children.

**Methodology:** This is a systematic review of Covid-19 infection associated with gastrointestinal symptoms in children; emphasizing its clinical, laboratory and imaging characteristics. The information and images obtained belong to the medical personnel in charge of the case, whose reinforcements rest on the statistical package Excel, Word and JPG.

**KEYWORDS :** Covid-19, Gastrointestinal Clinic, Children.

### INTRODUCTION

Lately, a multisystemic inflammatory condition has been described in children and adolescents, all of them similar to Kawasaki disease and another pathology called toxic shock syndrome, which could be related to COVID-19, presenting with acute disease accompanied by a hyperinflammatory syndrome, leading to multi-organ failure and shock<sup>4</sup>

The main characteristics are persistent fever, inflammation, in complementary examinations neutrophilia, elevated CRP, lymphopenia, with evidence of dysfunction of one or more organs (shock, cardiac, respiratory, renal, gastrointestinal and neurological), and with additional characteristics. This includes children with complete or partial criteria for Kawasaki disease.<sup>5</sup>

The WHO has developed a preliminary definition of the case, among them it names children and adolescents from 0-19 years with fever > 3 days and also 2 of the following criteria: Rash or bilateral non-purulent conjunctivitis or signs of mucocutaneous inflammation at the oral level, hands or feet; hypotension or shock; characteristics of myocardial dysfunction, pericarditis, valvulitis, or coronary abnormalities (including findings of elevated Troponin / NT-proBNP). Evidence of coagulopathy (elevation of PT, PTT, D-Dimer); acute gastrointestinal problems (diarrhea, vomiting,

abdominal pain); elevation of inflammation markers (ESR, PCR, procalcitonin). Absence of bacterial cause of inflammation, including bacterial sepsis, staphylococcal and streptococcal shock syndromes, infections associated with myocarditis (enterovirus). Evidence of Covid-19 (RT-PCR, or positive serology) or contact with patients with Covid-19 in the 4 weeks prior to the onset of symptoms<sup>6,7</sup>.

The vast majority of pediatric patients taking SARS-CoV-2 show mild respiratory symptoms. However, gastrointestinal symptoms are significantly present, according to a meta-analysis, with a cumulative incidence of 17.6% and in the pediatric population subgroup of 24.8%.<sup>8</sup>

### CASE PRESENTATION

This is a 9-year-old, 4-month-old patient, resident in Pichincha, Ecuador, a student, with a prenatal history of 5 normal controls; history of birth of a third pregnancy, obtained by caesarean section due to cephalopelvic disproportion at 40 weeks gestation without complications; Postnatal history with exclusive breastfeeding up to 7 months of age, without any personal, family or surgical pathological history.

Who, 6 days before his pediatric evaluation, presented moderate intensity EVA 7/10 colic abdominal pain, located in the left hypochondrium without irradiation, accompanied by a

thermal rise of 38.9 degrees Celsius, vomiting of food content and diarrheal stools in total of 6 times a day, the patient presented as an epidemiological history contact with a paternal grandfather positive for Covid-19; With this symptomatology, she was taken by her parents to a more complex hospital, where she was evaluated and upon physical examination, she was found: a patient with a regular general condition, conscious in all three spheres, normotensive, with saturations within normal range, cardiopulmonary auscultation was normal, abdomen soft, distended, painful on palpation in left abdomen, hydro-air noises present.

He underwent extension tests, showing lymphopenia of 585 / mcl, Glucose 85 mg / dl, Creatinine 0.56 mg / dl, Ferritin 455ng / ml. Dimer D 1,000 g / l, fibrinogen > 502s. C reactive protein (PCR) 413.4mg / l and procalcitonin (PCT) 1.44ng / ml; additionally, blood cultures, stool culture and Clostridium difficile toxin were performed, all of which were negative; Due to high suspicion of Covid-19 infection, nasopharyngeal PCR-SARS-CoV-2 was performed with a positive result.

Chest X-ray within normal range; due to abdominal pain, an ultrasound scan of the upper abdomen was requested with the result: Liver homogeneous echostucture, preserved echogenicity, normal size with defined edges, absent masses or cysts, normal intrahepatic vessels and ducts, normal gallbladder loops with increased peristalsis and abundant mesenteric lymph nodes. (Photo 1)



**Photo 1.** Upper Abdominal Ultrasound: Multiple Mesenteric Lymph Nodes Are Evident

With the diagnosis of Covid-19 infection, plus a gastrointestinal affection and after a medical meeting with the services of Pediatrics, Infectology and Gastroenterology and after prior informed consent to the parents of the minor, it was decided to start treatment with lopinavir / ritonavir, hydroxychloroquine. and intravenous methylprednisolone at pediatric doses; and due to the possibility of abdominal bacterial superinfection, intravenous amoxicillin-clavulanic acid was also associated. The patient evolved favorably, with clinical improvement and normalization of inflammatory markers, she completed 10 days of treatment, at which time the Covid-19 PCR swab was repeated with a negative result.

## DISCUSSION

On May 15, 2020, the World Health Organization (WHO) alerted countries to take the necessary measures to prevent the progression of multi-system inflammatory syndrome. The measure was taken after the emergence of several cases in Europe, where there were infants and adolescents who entered with symptoms similar to those of Kawasaki disease or with toxic shock<sup>3</sup>

Most of the patients had links with confirmed or suspected people or who tested positive for the new coronavirus strain. The warning signs were: thermal rise greater than 38 degrees, gastrointestinal complaints such as abdominal pain, diarrheal stools, skin rash. It manifests as a hyperinflammatory syndrome that evolves and can generate a shock. Given this reality, the Ministry of Health issued an alert on May 31, 2020 to properly capture and treat those who arrive with these

symptoms. In Ecuador, the first reported case occurred at the Dr. Francisco de Icaza Bustamante Children's Hospital on May 25, 2020; It was a 13-year-old adolescent who arrived with abdominal pain and covid-19, was hospitalized for several days, but did not arrive at the intensive care unit, being discharged after his recovery. While an 8-year-old girl died in Los Ríos, from this cause<sup>10</sup>

With this background, it is known that early recognition and diagnosis is important to ensure timely treatment and reduce the risk of long-term complications, with a high level of suspicion in children with fever, respiratory symptoms, and other nonspecific symptoms. Mild and moderate cases require only supportive care; for severe cases, consider admission to the pediatric intensive care unit, antibiotics, and immunomodulatory therapy after discussion with specialists.<sup>11</sup>

This is how our patient was managed, who, after having had contact with a positive patient for Covid-19, suddenly presented abdominal discomfort with a thermal rise, extension tests were performed, including nasopharyngeal swab, being positive. With all that said, we can say that the new SARS-CoV-2 causes nonspecific symptoms in children, the most commented on is the so-called systemic inflammatory syndrome, but in our patient, it was detected that gastrointestinal symptoms were the only manifestation that was associated with Covid-19.

## CONCLUSION

To date there is not enough information on how Covid-19 affects children, it is said that the vast majority of a multisystemic inflammatory syndrome, very similar to Kawasaki disease. As for the gastrointestinal symptoms associated with this new coronavirus and the condition they cause in the pediatric population, current protocols are aimed at managing the purely respiratory part, leaving many enigmas about other manifestations.<sup>12,13</sup>

Thus, at the present time we are living, it is essential that health professionals take into consideration this new medical condition; since children and adolescents can go to health services with a variety of symptoms; many of which are mild to moderate, however, a small percentage may deteriorate more quickly.

For this reason, this clinical case of a pediatric patient who presented with a digestive clinic (abdominal pain) associated with SARS-CoV-2 was exposed, where she shows us that the virus in children can present with nonspecific symptoms.

## Conflict Of Interest

The authors of the article have no conflict of interest.

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