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RENAL LYMPHANGIECTASIA IN A PATIENT AFFECTED BY COVID-19

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ABSTRACT

SUMMARY: In December 2019, a new subspecies of coronavirus was identified in China, which they called SARS-CoV-2, responsible for the subsequent disease that the WHO called COVID-19. The disease has spread rapidly causing a global pandemic. Much is still unknown about SARS-CoV-2, but early research supports the hypothesis that the severity of Covid-19 is conditioned by the hyperinflammatory response that occurs in our body when in contact with SARS-CoV-2. The severity of the condition is related to the respiratory failure it causes, however, there are studies that do not limit pulmonary involvement. Research indicates that the access mechanism of SARS-CoV-2 to the body is closely related to the ACE2 enzyme. An enzyme that, among other tissues, can be found in the epithelium of renal tubular cells. This is the reason why there are data from patients with Covid-19 that have a great effect on kidney function. It is for this reason that this clinical case of renal lymphagectasia is presented. Renal lymphagectasia is a rare entity of renal lymphatics that occurs in both children and adults, it can be unilateral or bilateral and has no sex predilection. It is characterized because there is dilation of the lymphatic ducts, generating cavities occupied by a liquid content corresponding to lymph. Its most frequent locations are the neck (70%) and the armpit (20%). Renal lymphangiectasia (RFL) is of very low frequency and can be confused with other cystic pathologies of the kidney. RFL has been described by various names such as: renal lymphangioma, peri-pelvic lymphangiectasia, polycystic renal sinus disease, renal hygroma, and multicystic perippelvic renal lymphangiectasia. It is believed to occur due to an alteration in the communication between the renal lymphatic ducts and the retroperitoneal lymphatics. We report the case of an elderly patient with Covid-19 infection, and LFR, in which this alteration was discovered incidentally in the study of abdominal pain associated with microscopic hematuria. **OBJECTIVE:** Describe bilateral renal lymphangiectasia associated with covid-19 infection. **DESIGN:** Prospective, observational in a single center. **METHODOLOGY:** This is a systematic review of bilateral renal lymphangiectasia in a patient affected by the new coronavirus (Covid-19); emphasizing its clinical characteristics and its short-term complications. The information and images obtained belong to the medical staff in charge of the case, whose reinforcements are provided by the Excel, Word and JPG statistical package.

KEYWORDS : bilateral renal lymphangiectasia, covid-19.

INTRODUCTION

Coronaviruses (CoV) are highly prevalent single-stranded RNA viruses in nature. They have many potential natural, intermediate and final hosts, a phenomenon that poses great challenges for their treatment and prevention of contagion. Seven subtypes of coronaviruses are known to be infectious to humans and of these, betacoronaviruses (beta-CoV) are those that are associated with potentially serious disease. Within this subtype are MERS-CoV and SARS-CoV, viruses that were responsible for outbreaks with considerable morbidity and mortality in the past.

However, what has been discovered in recent studies is that the genomic characterization of SARS-CoV-2 reveals a significant phylogenetic distance of these previously identified coronaviruses, since it shares only 79% and 50% of identity with it. SARS-CoV and MERS-CoV, respectively.

Compared to SARS-CoV and MERS-CoV, SARS-CoV-2 has high transmissibility and infectivity, but low mortality rate, however, there are suspicions that its actual mortality rate may not have been estimated correctly. According to the latest studies, SARS-CoV-2 infection comprises two distinct phases. A first phase that is associated with viral replication and its cytopathic effect, and a second phase that would begin after 7-10 days from the onset of symptoms and that is associated with the risk of death.

This stage is characterized by a progressive pulmonary compromise with increasing needs for oxygen supplementation and ventilatory support, which seems to be secondary to a hyperinflammatory syndrome and derived from the release of cytokines.

The therapeutic management of the disease is still under analysis and its approach still lacks significant evidence. Just as antiviral drugs such as chloroquine-hydroxychloroquine, lopinavir / ritonavir, darunavir / ritonavir and darunavir / cobicistat can be used in the viral replication phase, the indication for this antiretroviral therapy is uncertain and to date there are no drugs approved for it. treatment of SARS-CoV-2 infection.

Despite the previously described differences between SARS-CoV-2 and other previously identified coronaviruses, several studies have reported that SARS-CoV-2 like SARS-CoV exploits the same membrane-bound angiotensin converting enzyme 2 (ACE2) to gain access to its target cells, although SARS-CoV-2 has a higher binding affinity in comparison.

ACE2 is an enzyme that counteracts the angiotensin-aldosterone system (RAAS). A recent study shows that the common ancestor of these two viruses is similar to the bat coronavirus HKU9. These have a three-dimensional spike protein structure, which is tightly bound to ACE2. Therefore, ACE2-expressing cells can act as target cells and be susceptible to Covid-19 infection, such as type II alveolar cells

(AT2) in the lung.

In this sense, it has also been shown that the ACE2 protein is expressed in many other types of cells, such as intestinal epithelial cells and renal tubular epithelial cells.

From this point we start to talk about renal lymphangiectasia; it is an entity characterized by different degrees of dilation of the lymphatic ducts. It is produced by an alteration in the development of lymphatic structures in which cavities filled with liquid, simple or multiloculated, are generated, its pathophysiology remains unknown. Its evolution is variable and several alternatives have been proposed for its treatment, ranging from symptomatic management and percutaneous drainage to laparoscopic ablation and nephrectomy in the most severe cases.

CASE PRESENTATION

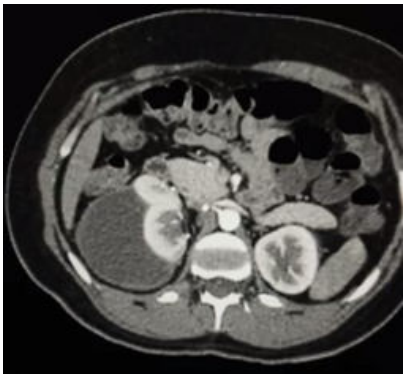
This is a 45-year-old male patient, born and resides in Guayaquil, university teaching occupation does not refer personal or family pathological antecedents. Without cognitive impairment, he went to a specialized hospital with clinical symptoms for 15 days of evolution of colicky abdominal pain, eva 8/10, unquantified thermal rise, cough without expectoration and hematuria.

Upon physical examination: Blood pressure: 140 / 90mmHg, Temperature of 39 °C, HR: 105 bpm, RR: 23 rpm; baseline saturation of 88%, which requires a reservoir at 1 bpm for 90% saturation. Eutrophic, general appearance regular, auscultation with bilateral scattered crackles, diffusely painful abdomen.

In extension tests: leukocytes 12.00 Neutrophils: 86%, Hemoglobin 13.30 g / dl, procalcitonin 2 ng / ml, creatinine 1.3 ng / dl, urine test 8-10 red blood cells per field, leukocytes 5-6 per field and absence of bacteria., RT-PCR for covid-19 positive. Chest X-ray: bilateral diffuse opacities suggestive of viral infection (Covid-19). (Photo 1)

Photo 1. Chest X-ray: bilateral diffuse opacities

Due to abdominal pain and hematuria, a simple and contrasted tomography of the abdomen and pelvis was requested. (Photo 2)



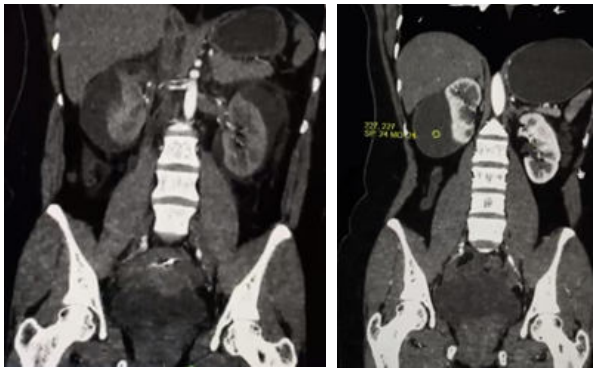


Photo 2: Tomography of the abdomen and pelvis S / C venous, axial and coronal section: where a rounded hypodense, cystic image, without enhancement, of thin walls and lobulated surface is observed at the level of the bilateral renal sinus with extension to the perirenal space, density of 24 HU, probably related to bilateral renal lymphangiectasia

Once diagnosed with pneumonia by covid-19 with severity criteria, and by tomographic findings of bilateral renal lymphangiectasia, treatment for viral infection and observation of renal cystic pathology was decided; without response to treatment patient with higher oxygen requirement dies after 12 days of hospitalization

DISCUSSION

RFL is a very rare and benign disorder, considered a developmental malformation of the renal lymphatics. It can be congenital or acquired. Exceptionally, family cases have been reported. Knowledge of this condition is based on publications of isolated cases or small case series. It is usually bilateral (90%), as is the case presented; but it can occur in a single kidney and exceptionally only in a part of a kidney. It affects both sexes equally and can be diagnosed at any age from birth to old age. Most of the time, RFL is discovered incidentally when imaging the abdomen for other causes. Other times it is discovered during the study of patients with nonspecific abdominal pain, flank pain, gross hematuria. Our patient presented these characteristics of an RFL, however, added to his Covid-19 infection, it was the complication that led to his death.

CONCLUSIONS

There is little information on the long-term evolution of TRF. There is a report of spontaneous regression in a neonate, of exacerbation during a pregnancy in 2 patients, and of atrophy of a kidney in a young adult. In our case, it was not possible to know its evolution, because the covid-19 infection brought an unfavorable outcome.

CONFLICT OF INTERESTS

The authors declare that they have no conflict of interest.

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