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Case Report

Covid-19 Infection Masked as Renal Colic

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Abstract

Since the first reported Covid-19 on January 28, 2020 in Germany, the understanding of the disease through Sars-Cov 2 has fundamentally changed. If the pulmonary manifestation was initially considered to be pathognomonic, the clinical presentation changed as the pandemic progressed. We report on a patient with clinical symptoms of a renal colic, in whom a pulmonary manifestation with Covid-19 was noticed more by chance.

Keywords: *Covid-19; Kidney Colic; Flank Pain; Pneumonia Under Covid-19*

Introduction

A 52-year-old man presented to the emergency room with colic-like symptoms. Urolithiasis was initially suspected in the lab results. However, this could be excluded in the abdominal CT. Instead, lung changes typical of an active infection with Sars-Cov 2 were reported that were subsequently confirmed in the PCR test and chest CT.

Case Report

A 52-year-old patient presented himself to the emergency room for the second time at 1:25 a.m. He had been seen at the same time the night before. His main complaint consisted of intermittent left-sided flank pain with an intensity of 9 to 10/10 VAS. There were no general symptoms. Fever, nausea, vomiting were denied, as are irregularities in mictio or bowel movements. The patient had the feeling that the symptoms were more pronounced when lying down, depending on the position, which is why there is a strong urge to move. Especially in times of Corona, contacts with people who could have been tested positive or typical Covid symptoms were denied. The doctor on duty on the day before had the impression of a vertebrate cause. The symptoms appeared to be more related to posture and movement combined with localized paravertebral tenderness. An urine analysis and ultrasound examination were routinely performed but had not revealed any pathological findings. Symptomatic analgesia was recommended.

At the follow-up presentation, the patient showed up with an urge to move. When the doctor saw him, he crouched in front of the examination couch and was unable to take a comfortable position. The abdomen felt soft. There was no evidence of inguinal or abdominal wall hernias. The spine could be moved painlessly into all directions. No paravertebral tenderness was found but some discomfort on palpation below the left ribcage and the renal pelvis.

The vital signs, especially temperature and pO_2, were normal. Ultrasound found inconspicuous upper abdominal organs. The left kidney in particular presented itself without congestion or echogenic internal structures. No free fluid, intestinal cockades or enlarged pan-

creatic lodge were seen. Laboratory tests showed increased inflammation values: white blood cell count 23,300 G/l and a CRP 80 mg/dl. Electrolytes, liver values, pancreatic enzymes, LDH, and creatinine were normal. The urine sediment was positive for blood. The POCT PCR test on admission showed evidence of an active Covid-19 infection. A "stone" CT of the abdomen was performed on suspicion of a renal colic with possible renal pelvic inflammation.

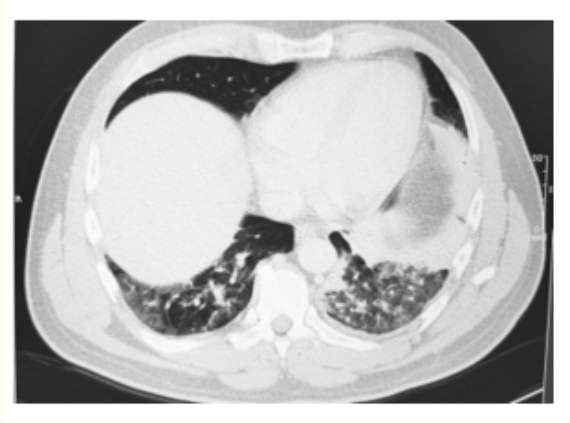

Figure 1: *Initial CT abdomen.*

Urolithiasis or urinary outflow disorder could not be demonstrated. In the basal sections of the lung, however, changes similar to those of a Covid infection were noticeable A chest CT was added. The following findings were noticeable.

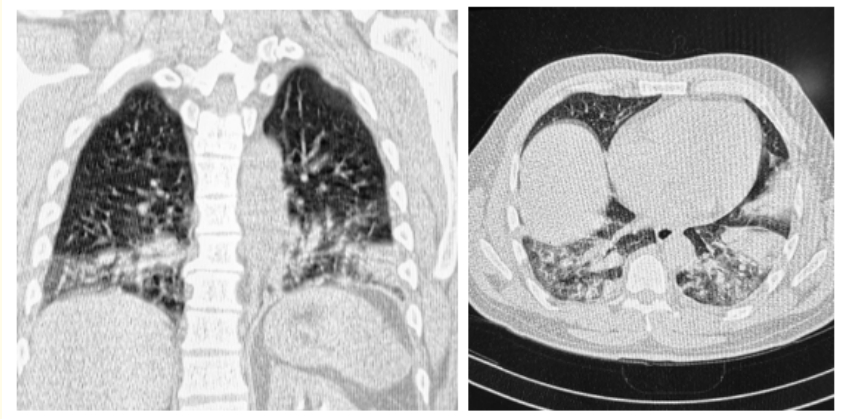

Figure 2: *CT chest confirming Covid-19 typical signs of pulmonary infection.*

In the basal sections, there was a mixed picture of dystelectasis and frosted-glass-like opacities in both lungs that were in keeping with a Covid-19 infection (Category 2, Cov19ind). Treatment started with targeted antibiotics and isolation of the patient. The PCT test on the following day confirmed Covid-19 infection with a ct value over 40. The patient then left the clinic against medical advice.

Discussion

The first confirmed case of an infection with the "severe acute respiratory syndrome corona virus 2" (SARS-CoV-2) in Germany was reported on January 28, 2020. From this point on, the virus spread pandemically across the country. The lung involvement was regarded as decisive for the severity of the course. With an increasing duration of the pandemic, however, it also became evident that Covid-19 differed significantly from its predecessors SARS ("severe acute respiratory syndrome") and MERS ("middle east respiratory syndrome"). The leading symptoms initially included fever, sore throat, cough and shortness of breath, with the predominant manifestation of the respiratory tract as cardinal symptom. In the course of the COVID-19 pandemic, however, the clinical spectrum expanded to include additional organ manifestations such as headaches, abdominal symptoms, vascular infestation, diarrhea, loss of taste and smell or skin changes. The understanding of the disease turned into a systemic disease with a very heterogeneous appearance. On the one hand, respiratory symptoms can be in the foreground, but also only the individual organ manifestations.

In our case, a young patient presented with intermittent flank pain and an urge to move. The differential diagnosis was initially a nephrogenic cause with stone passage as in urolithiasis. This would have been consistent with the detection of blood in his sediment. The increased inflammation levels were initially unclear. Sonography and the "stone" CT could not confirm urolithiasis.

Instead, a basal pulmonary manifestation of a Covid-19 infection was noticed. This, in turn, explained the increased inflammatory parameters. There was no fever and there was no anamnestic evidence of a Covid-19 infection. The initial POCT-PCT test was negative, but the PCR test was positive with a high ct value. This means that our patient falls into the group of patients in whom, due to gastrointestinal symptoms, the diagnosis of Covid 19 infection is made by abdominal computed tomography by coincidence. It was not the abdominal changes that pointed the way, but the basal sections of the lung on CT.

The clinical presentation of Covid-19 infection has changed. Initially described as lung manifestation, it has become obvious that the virus infection is a disease that can present in many ways and affect any organ system. From the surgical perspective, abdominal symptoms are of relevance. A single center study by Luo [1] revealed that out of 1,141 confirmed cases of COVID-19 16% of patients complained of GI symptoms. A meta-analysis of 4,234 patients showed a prevalence of GI symptoms of 17.6% [2]. A higher incidence could be confirmed by Schmulson [3] in a review of the literature of 2800 cases that revealed 39% of abdominal symptoms in a Covid infection. A multicenter study by Pan [4] found that more than 50% of patients with Covid-19 infection reported digestive symptoms with the most commonest being loss of appetite, diarrhea, vomiting and abdominal pain.

Other case reports included colitis, hemorrhagic colitis or hematochezia as Covid-19 manifestation [5-7]. However, the presentation is very heterogeneous and can also include patients who initially or throughout the course of the infection only have GI symptoms as the sole symptom of a Covid infection [8] even without fever [9-13].

The colic-like symptoms of our patient initially indicated urolithiasis. The circumscribed pain with high intensity and intermittent character did not want to match the lung involvement of Covid-19.

However, there is a study by Widyardhama [14] that reports muscle pain along with a COVID-19 infection. The possible mechanism of muscular or abdominal symptoms is found to be a direct viral invasion of target cells and/or immune-mediated tissue and end-organ injury [15-17], dysregulation of the angiotensin-converting enzyme 2, immune-mediated tissue damage and intestinal dysbiosis caused by microbiota.

The angiotensin-converting enzyme 2, the receptor of SARS-CoV-2, is found not only in the lungs, but also in the epithelial cells of the upper esophagus, in the small intestine, in the liver, the biliary tract, and in the large intestine [18]. This can explain the diverse clinical picture associated with Covid-19 infections, e.g. joint pain, stomach pain and testicular pain. Neuropathic pain can also occur, albeit rarely.

Infestation of the gastrointestinal tract is of significance. There is evidence from former studies that verified the viral detection in biopsy specimens and stool specimen. The viral load can persist even after discharge from hospital, which can explain not only the gastrointestinal symptoms but also potential recurrence and transmission of Covid-19 from a persistently secreting human [19].

The standard procedure for identifying Covid-19 is the PCR smear and computed tomography. In patients with clinical symptoms, detection by a smear test with reverse transcriptase polymerase chain reaction testing for viral RNA is the norm [20,21]. It offers almost absolute certainty that virus material can be identified and the specific diagnosis of a Covid-19 infection [22]. The native low-dose CT has a high level of accuracy for the diagnosis with high sensitivity (94.7%) and specificity (91.4%) towards other lung diseases with the same clinical symptoms. A high informative value is achieved in connection with a smear result and the clinical course. Although the positive smear test/PCR establishes the diagnosis of COVID-19 with absolute specificity, the advantage of an low-dose CT is the quick availability of the results, whereas the smear results are only available after a median of 8.3 hours after laboratory work-up. This enables a potentially infectious patient to be quickly identified in a pandemic situation [23].

Interestingly, CT scans can reveal a lung involvement in patients with abdominal symptoms. Like our patient, some authors [24-27], have previously shown the coincidence of abdominal symptoms with an asymptomatic lung manifestation. Hossain., *et al.* [28] found that more than 50% of their 119 patients showed signs of COVID-19 on CT of the abdomen or spinal column. It becomes even more delicate as abdominal symptoms were found to be the first symptom preceding the lung manifestation [29]. This represents a particular challenge for the practitioner, as the atypical anamnesis increases the risk of exposure for hospital staff and, if necessary, inpatients. Some authors therefore recommend radiologists to carefully check the CT examinations of the abdomen for typical COVID-19 findings in the bases of the lungs [30].

Conclusion

Abdominal discomfort can be an atypical presentation of Covid-19 and even precede the clinical presentation of lung symptoms. Symptoms are very heterogeneous and, in addition to gastrointestinal symptoms, can also imitate the clinical picture of a renal colic. The diagnosis of existing lung involvement can appear as a secondary finding in the abdomen CT. The particular challenge lies in the early detection of a Covid-19 infection. Until they are excluded, the medical staff should protect themselves accordingly.

Bibliography

1. Luo S., *et al*. "Don't Overlook Digestive Symptoms in Patients With 2019 Novel Coronavirus Disease (COVID-19)". *Clinical Gastroenterology and Hepatology* 18.7 (2020): 1636-1637.

2. Cheung KS., *et al*. "Gastrointestinal Manifestations of SARS-CoV-2 Infection and Virus Load in Fecal Samples From a Hong Kong Cohort: Systematic Review and Meta-analysis". *Gastroenterology* 159.1 (2020): 81-95.

3. Schmulson M., *et al*. "Beware: Gastrointestinal symptoms can be a manifestation of COVID-19". *Revista de Gastroenterología de México* 85.3 (2020): 282-287.

4. Pan L., *et al*. "Clinical characteristics of COVID-19 patients with digestive symptoms in Hubei, China: a descriptive, cross-sectional, multicenter study". *The American Journal of Gastroenterology* 115.5 (2020): 766-773.

5. Jaijakul S. "Colitis as a Sole Presentation of SARS-CoV-2 Infection: Case Report". *SN Comprehensive Clinical Medicine* 11 (2020): 1-3.

6. Carvalho A., *et al*. "SARS-CoV-2 gastrointestinal infection causing hemorrhagic colitis: implications for detection and transmission of COVID-19 disease [preprint]". *The American Journal of Gastroenterology* 115 (2020): 942-946.

7. Guotao L., *et al*. "SARS-CoV-2 infection presenting with hematochezia". *Médecine et Maladies Infectieuses* 50.3 (2020): 293-296.

8. Pazgan-Simon M., *et al*. "Gastrointestinal symptoms as the first, atypical indication of severe acute respiratory syndrome coronavirus 2 infection". *Polish Archives of Internal Medicine* 130.4 (2020): 338-339.

9. Sellevoll HB., *et al*. "Acute abdomen as an early symptom of COVID-19". *Journal of the Norwegian Medical Association* 140.7 (2020).

10. Wong SH., *et al*. "Covid-19 and the digestive system". *Journal of Gastroenterology and Hepatology* 35.5 (2020): 744-748.

11. Guan WJ., *et al*. "Clinical characteristics of coronavirus disease 2019 in China". *The New England Journal of Medicine* (2020).

12. An P., *et al*. "Clinical Features of 2019 Novel Coronavirus Pneumonia Presented Gastrointestinal Symptoms But Without Fever Onset". *SSRN Electronic Journal* (2020).

13. Gahide G., *et al*. "COVID-19 patients presenting with afebrile acute abdominal pain". *Clinical Medicine* 2.3 (2020): 4-6.

14. Widyadharma IPE., *et al*. "Pain as clinical manifestations of COVID-19 infection and its management in the pandemic era: a literature review". *The Egyptian Journal of Neurology, Psychiatry and Neurosurgery* 56.1 (2020): 121.

15. Li W., *et al*. "Angiotensin-converting enzyme 2 is a functional receptor for the SARS coronavirus". *Nature* 426 (2003): 450-454.

16. Holshue ML., *et al*. "First case report of 2019 novel coronavirus in the United States*". The New England Journal of Medicine* 382 (2020): 929-936.

17. Tian Y., *et al*. "Review article: gastrointestinal features in COVID-19 and the possibility of faecal transmission". *Alimentary Pharmacology and Therapeutics* 51.9 (2020): 843-851.

18. Xiao F., *et al*. "Evidence for Gastrointestinal Infection of SARS- CoV-2". *Gastroenterology* 158 (2020): 1831-1833.

19. Wang D., *et al*. "Clinical Characteristics of 138 Hospitalized Patients With 2019 Novel Coronavirus-Infected Pneumonia in Wuhan, China [published correction appears in JAMA". *JAMA: The Journal of the American Medical Association* 323.11 (2020): 1061-1069.

20. Wang W., *et al*. "Detection of SARS-CoV-2 in Different Types of Clinical Specimens". *JAMA: The Journal of the American Medical Association* 323.18 (2020): 1843-1844.

21. Qi Song., *et al*. "Point-of-care testing detection methods for COVID-19". *Lab Chip* 21 (2021): 1634-1660.

22. Corman VM., *et al*. "Detection of 2019 novel coronavirus (2019-nCoV) by real-time RT-PCR". *Euro Surveill* 25.3 (2020): 2000045.

23. Schulze-Hagen M., *et al*. "Low-dose chest CT for the diagnosis of COVID-19—a systematic, prospective comparison with PCR". *Deutsches Ärzteblatt International* 117 (2020): 389-395.

24. Sendi AA., *et al*. "Incidental typical COVID-19 appearance on the lung bases, visualized at abdominal CT for a patient that presented with abdominal pain and nausea". *Radiology Case Reports* 15.8 (2020): 1238-1241.

25. Siegel A., *et al*. "Lung Base Findings of Coronavirus Disease (COVID-19) on Abdominal CT in Patients With Predominant Gastrointestinal Symptoms". *American Journal of Roentgenology* 215.3 (2020): 607-609.

26. Kim J., *et al*. "Abdominal and testicular pain: An atypical presentation of COVID-19". *American Journal of Emergency Medicine* 38.7 (2020): 1542.e1-1542.e3.

27. Dane B., *et al*. "Unexpected Findings of Coronavirus Disease (COVID-19) at the Lung Bases on Abdominopelvic CT". *AJR* 215 (2020): 603-606.

28. Hossain R., *et al*. "CT Scans obtained for nonpulmonary indications: associated respiratory findings of COVID-19". *Radiology* 296 (2020): E173-E179.

29. Altermanini M., *et al*. "A challenging case of COVID-19 infection presented with isolated acute abdominal pain: A case report and literature review". *SAGE Open Medical Case Reports - SAGE Journals* 9 (2021): 2050313X20983211.

30. Amaral LTW., *et al*. "Abdominal symptoms as initial manifestation of COVID-19: a case series". *Einstein* 18 (2020): eRC5831.

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