

A Covid 19 Case Report complicated with respiratory failure and retroperitoneal hematoma

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Abstract

Introduction: *The Covid 19 pandemic confronted us with a series of multidisciplinary pathologies, beginning with the virus and followed by a cascade of SIRS and multiorgan failure. During the treatment therapy of antivirals, anticoagulants, corticosteroids and antibiotics, we also encounter medications' interactions. Method:* We described a case report of a 74-year-old man, who during the course of hospitalization had several complications. **Results:** He developed respiratory failure, delirium, SIRS, as well as retroperitoneal hematoma (HRP) as a complication of anticoagulant therapy. It was followed by hemorrhagic shock, respiratory distress and the patient was submitted under mechanical ventilation with step-by-step resuscitation. The patient made clinical and laboratory improvement by being extubated and thereafter was rehabilitated pulmonary and physically. On the 42nd day of hospitalization the patient was discharged from the hospital. Pulmonary and locomotor rehabilitation of the patient was established 2-3 weeks after hospital discharge. **Conclusion:** Establishing a retroperitoneal hematoma diagnosis requires clinical intuition. Some signs which can raise an alert for a retroperitoneal hematoma can be hypotension, tachypnea and back and abdominal pain in patients who are under anticoagulant therapy.

Key Words: Covid 19, complications, retroperitoneal hematoma

Introduction

The novel coronavirus epidemic of 2019 (COVID-19) resulted in a global public health emergency¹. The grown body of literature described Covid-19 as a complex disease. There are several studies describing the complications of Covid-19. We recognize Covid-19 as a viral disease with poly-pathological potential, which can affect all systems and organs of the organism, regardless of physio-pathological mechanisms that are all over the place. In addition to respiratory issues, COVID-19

has been linked to extrapulmonary symptoms and consequences. In patients with critical forms of the disease, SARS-CoV-2 can cause a hypercoagulability situation, which can lead to thrombotic phenomena in a variety of organs (for example, pulmonary embolism)². Consequently, the use of anticoagulant preparations as prophylaxis was seen as a treatment option³. Elevated levels of C-reactive protein and pro-inflammatory cytokines (IL-6, tumor necrosis factor- α , IL-8, etc.) determine the mimicry of vasculitis⁵. There is evidence of *direct viral infection of endothelial* cells which may cause hypercoagulability and diffuse blood clots (disseminated intravascular coagulation [DIC]) and result in “multiple organ injury”^{4,6-9}. DIC is known to be associated with platelet and fibrinogen consumption, resulting in an increased risk of bleeding.

Method

We described a case report of a 74-year-old man, who during the course of hospitalization had several complications. Covid 19 was verified in our patient by reverse transcriptase – protein chain reaction (RT-PCR) test on nasopharyngeal swab sample. The patient was admitted to hospital and had no previous history of injuries. We have agreed with the patient on ethical issues and anonymous data. Regarding symptomatology the patient was hospitalized with symptoms of cough, myalgia, asthenia, fever which started 10 days previous to the referral in the hospital and was worsened in the last 2-3 days with difficulty in breathing, during exertion and at rest. The decrease in SO₂ was measured with oximeter at home.

On admission the patient refers that he suffers from HTA and was under treatment. On the day of hospitalization the temperature was 37.7°C, tachypnea 22’, SO₂ – 85% in room air in the lying position and SO₂ 95% under 7-8l/min O₂ support with a nasal mask. In laboratory tests, we noticed increased inflammatory markers (CPR, VES, fibrinogen, ferritin, d dimer). During following days it was observed 1st stage of encephalopathy with signs of delirium. In CT scan of lung were described bilateral ground glass opacities. Therapy was started with a combined antiviral-remdesivir + antibiotic tazocin + anticoagulant clexane 6000Ui x 2 sc, methyl prednisolone 40 mg x 2 iv, haloperidol and deslorazepam for delirium and agitation. In the first week of hospitalisation the need for O₂ therapy increased up to 30l/min with High Flow Nasal Mask. At the end of the second week the clinical signs began to improve, there was a decrease in inflammatory markers and the gradual decrease in the need for O₂.

At the beginning of the 3rd week, the patient complained of pain in his left leg, had hypotension TA 90/60 mm/Hg and tachypnea - 25/min. Objectively, a hematoma area was observed in the back of the right renal lobe. Abdominal

CT scan was urgently performed, focused in the area where the retroperitoneal hematoma of the left iliopsoas was evident.

Red Blood Cells and hemoglobin decreased to 2.9 million and 7.2 mg/dl. In these conditions, the patient got transfusion with erythrocyte mass 9fl and 12 fl frozen fresh plazma, anticoagulants were stopped and he was resuscitated with fluids and vasopressors noradrenaline, dopamine, lasix to maintain vital parameters and the renal function.

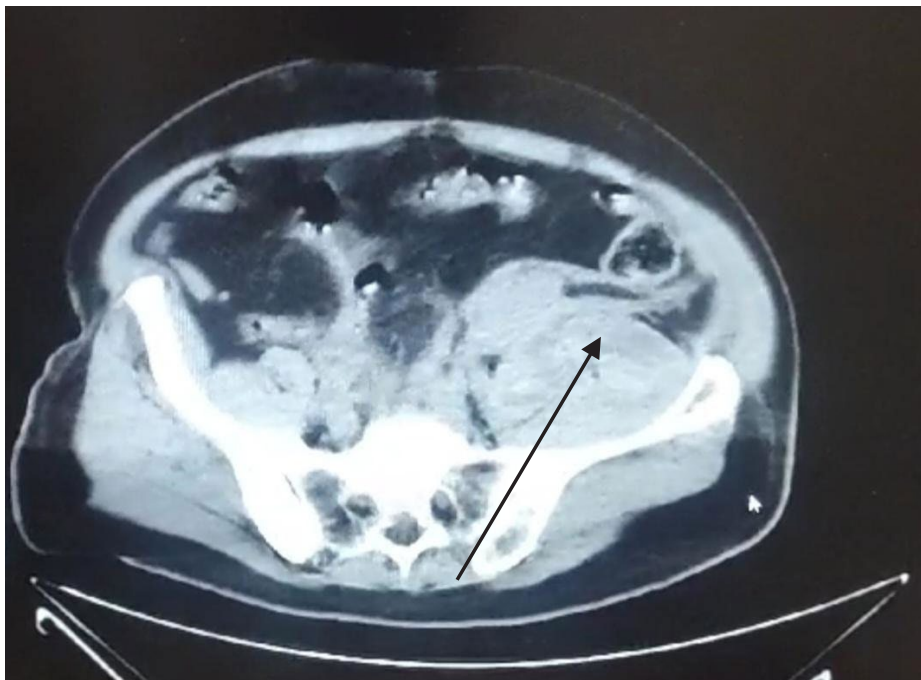
On the 3rd day of the event, the patient suffered acute respiratory distress - pulmonary edema, for which he was intubated in emergency conditions. After 72 hours the situation improved by gradually lowering FIO2 until extubation. Clinically, there was improvement and stabilization of arterial pressure, in ultrasound HRP withdrawal but with rather low muscle strength and expectorate extraction. The therapy was modified with antibiotics and antifungals, human albumin, pentaglobin, aminoven and enteral nutrition. Fibro-bronchoscopy and bronchial lavage were performed, and at the same time we began physiotherapy and postural drainage.

The course improved after 6 weeks of hospitalization and the patient was discharged at home in better conditions.

FIGURE 1: CT scan of the lungs: Opacities ground glass



FIGURE 2: Retroperitoneal hematoma



Discussion

Covid-19 may have a tendency to form vasal thrombosis affecting various organs. They can be unique, of different dimensions, but also in the form of microthrombotic vasculitis, mainly pulmonary. Most often this phenomenon appears in the venous system, but it also affects the arteria, appearing with different clinical syndromes.

The extrapulmonary manifestations of COVID-19 are highlighted along with the proposed pathophysiologic mechanisms and management considerations for each system¹⁰. Patients may be predisposed to venous thrombosis by direct effects, Covid-19 or tertiary (potent inflammatory response); critical disease; traditional risk factors such as age, D-dimer supplementation; cytokonic storm; hypoxic damages; endothelial dysfunction; Hypercoagulation and/or increased platelet activity.

After recognizing the possibility of the involvement of SARS-COV2 in the occurrence of thrombotic complications such as microvascular thrombosis, venous thromboembolic disease, and stroke, anticoagulant therapy has commonly been used to prevent or treat COVID-19 patients¹¹. Several guidelines recommend anticoagulants such as aspirin, enoxaparin and unfractionated heparin.

Establishing a retroperitoneal hematoma diagnosis requires a clinical intuition because the signs and symptoms in the early stages are not visible until a significant amount of blood flows. The clinical symptoms that make you suspect are progressive development of arm, abdominal and back pain or hemodynamic alterations in patients who are under anticoagulation therapy.

RPH (retroperitoneal hematoma) in patients with Covid 19 under anticoagulant can occur to unknown causes. On the other hand, it is assumed that their use can spontaneously lead to secondary RPH. In our case, age, history of high arterial pressure and SIRS developed by Covid-19 could be predisposing factors of RPH.

Recommendations

Covid 19 remains a challenge in the management and treatment of numerous complications. Attention should be paid to the factors of hypercoagulability and those predisposing individuals to hemorrhage to manage in time such life-threatening events as HRP.

References

1. Retroperitoneal hematoma in patients with COVID-19 infection during anticoagulant therapy: A case series and literature review - PMC (nih.gov)
2. Naderi Z, Tajmiriahi M, Dolatshahi K, et al. Tisdale score successfully predict outcomes of QT-prolonging treatment in COVID-19 patients. *Immunopathologia Persa* 2022. (in press). Available online: <https://ipp29311.pdf> (immunopathol.com) [Google Scholar]
3. Carfora V, Spiniello G, Ricciolino R, et al. Anticoagulant treatment in COVID-19: a narrative review. *Journal of thrombosis and thrombolysis* 2021; 51: 642–648. [PMC free article] [PubMed] [Google Scholar]
4. Wang T, Du Z, Zhu F, Cao Z, An Y, Gao Y, et al. Comorbidities and multi-organ injuries in the treatment of COVID-19. *Lancet*. 2020;395:e52. doi: 10.1016/S0140-6736(20)30558-4. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
5. Zhang W, Zhao Y, Zhang F, Wang Q, Li T, Liu Z, et al. The use of anti-inflammatory drugs in the treatment of people with severe coronavirus disease 2019 (COVID-19): The experience of clinical immunologists from China. *Clin Immunol*. 2020;214:108393. doi: 10.1016/j.clim.2020.108393. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
6. Menter T, Haslbauer JD, Nienhold R, Savic S, Hopfer H, Deigendesch N, et al. Post-mortem examination of COVID19 patients reveals diffuse alveolar damage with severe capillary congestion and variegated findings of lungs and other organs suggesting vascular dysfunction. *Histopathology*. 2020 doi: 10.1111/his.14134. doi: 10.1111/his.14134. [PMC free article] [PubMed] [CrossRef] [CrossRef] [Google Scholar]



7. Ackermann M, Verleden SE, Kuehnel M, Haverich A, Welte T, Laenger F, et al. Pulmonary Vascular Endothelialitis, Thrombosis, and Angiogenesis in Covid-19. *N Engl J Med.* 2020;383:120–8. doi: 10.1056/NEJMoa2015432. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
8. Wichmann D, Sperhake JP, Lütgehetmann M, Steurer S, Edler C, Heinemann A, et al. Autopsy findings and venous thromboembolism in patients with COVID-19: a prospective cohort study. *Ann Intern Med.* 2020:M20–2003. doi: 10.7326/M20-2003. [PMC free article] [PubMed] [CrossRef] [Google Scholar]
9. Scialpi M, Sara S, Piscio I, Scalera GB, Longo F. Pulmonary thromboembolism in critical ill COVID-19 patients. *Int J Infect Dis.* 2020;95:361–2. doi: 10.1016/j.ijid.2020.04.056. [PMC free article] [PubMed] [CrossRef] [Google Scholar].
10. Gupta A., Madhavan M. V., Sehgal K., et al. Extrapulmonary manifestations of COVID-19. *Nature Medicine* . 2020;26(7):1017–1032. doi: 10.1038/s41591-020-0968-3. [PubMed] [CrossRef] [Google Scholar]
11. Li Y, Xu Y, Shi P, et al. Antiplatelet/anticoagulant agents for preventing thrombosis events in patients with severe COVID-19: A protocol for systematic review and meta-analysis. *Medicine* 2020; 99: e21380. [PMC free article] [PubMed] [Google Scholar]