

A Case of COVID-19 with Recent Surgery for Subdural Hematoma – A Therapeutic Thromboprophylaxis Dilemma

Dear Sir,

The practice of preemptively administering therapeutic doses of low-molecular-weight heparin (LMWH) to prevent the dreaded complication of venous thromboembolism in COVID-19 cases is practiced globally.^[1,2] LMWH increases the chances of bleeding, but since COVID-19 causes a relative prothrombotic state, it is needed to administer LMWH in such cases. Chronic subdural hematoma (cSDH) is one of the most common surgical interventions in daily neurosurgical procedures in which mortality and morbidity vary with urgency and postoperative complications. The risk of recurrent hematoma after cSDH is 5%–30% within a span of 2–3 months.^[3] An anticoagulant drug like LMWH is a known risk factor for cSDH. The use of anticoagulants in severe COVID-19 patients in postoperative cSDH is controversial. Here, we present a clinical dilemma to initiate LMWH in a patient suffering from severe COVID-19 infection in postoperative cSDH surgery.

A 79-year-old male, known hypertensive, developed left-sided hemiplegia and slurring of speech over 3 months after a trivial head injury. Noncontrast computed tomography of the head image was suggestive of a right cSDH. He underwent a burr hole craniotomy and evacuation of SDH under general anesthesia after a negative real-time reverse transcription–polymerase chain reaction (RT-PCR) report. The immediate postoperative period was uneventful. On the 4th day, the patient had a high fever, cough with a respiratory rate of 30/min, and drop in oxygen saturation to 82% on room air. Due to ongoing COVID-19, a test of real-time RT-PCR for COVID-19 was asked which turned out to be positive. The patient was shifted to COVID hospital and placed on oxygen therapy by nonrebreathing mask (NRBM). Further investigation revealed that he had leukocytosis with grossly increased neutrophil-lymphocyte ratio. His serum Ferritin, D-dimer, C-reactive protein, and interleukin-6 were also elevated, suggestive of an ongoing cytokine storm. Blood urea and creatinine were found to be 49.8 and 1.09 mg/dl, respectively. On the X-ray chest, the patient had bilateral fluffy opacities. Arterial blood gas (ABG) analysis was indicative of respiratory alkalosis with hypoxemia and features suggestive of acute respiratory distress syndrome. The patient was placed on noninvasive ventilation (NIV), and pharmacotherapy for severe COVID-19 was initiated. Invasive ventilation as a modality of primary treatment was withheld. Owing to the possibility of pulmonary thromboembolism (which is a well-known sequelae of COVID-19), LMWH was initiated. The risk of recurrence of cSDH was always a possibility. Strict neurological monitoring was done. After 5 days of NIV, the patient improved. Tachypnea resolved and oxygenation was

adequate in ABG. He was subsequently weaned off from NIV to NRBM and then on a facemask. His cytokine storm was resolved. His LMWH was continued for 10 days, even though there was a possibility of rebleed. The patient turned out to be COVID negative on his 22nd day of admission and was discharged from the hospital.

Anticoagulant therapy can reduce the risk of thrombotic events, but its benefit must be weighed against its potential for higher risk of bleeding, particularly intracranial hemorrhage. Our patient was given low dose anticoagulant therapy with LMWH 40 mg OD which was safe and there was no recurrence of any bleed. High-dose thromboprophylaxis must be used cautiously as the recurrence of cSDH with such therapy is not uncommon.

The question of whether to resume thromboprophylaxis early or late following burr-hole drainage of cSDH is important. In the elderly, there is a high risk of cardiorespiratory embolism, especially in the setting of COVID-19.^[2,4] Early administration of thromboprophylaxis (<48 h) does not affect the recurrence of cSDH, and therefore, it can be considered safe.^[5] Since the higher dosage of thromboprophylaxis seems to correlate significantly with higher recurrence rates, continuous and close monitoring to be done when prescribing and administering such dosages.

Intensive monitoring of the vital parameters, including neurological monitoring, is to be done. If there is a sudden drop in neurological status, rebleed should be suspected and after securing the airway, the emergency NCCT head should be planned. Immediate evacuation of the SDH might be required. LMWH acts as a double-edged sword, the risk, and benefits of using it should be weighed properly before initiating the therapy.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patient has given his consent for his images and other clinical information to be reported in the journal. The patient understands that his name and initial will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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