

Anticoagulants

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Subarachnoid and intraparenchymal haemorrhages: 3 case reports

In a case report from the USA, a 59-year-old man, a 61-year-old woman and a 59-year-old woman were described, who developed intracranial haemorrhages during treatment with apixaban, enoxaparin-sodium or heparin [*routes, dosages, durations of treatments to reactions onsets not stated*].

Patient 1: A 59-year-old man, who had a history of well-controlled hypertension, presented with acute hypoxic respiratory failure from COVID-19 pneumonia and was intubated. During his admission, he received unspecified steroids and off label hydroxychloroquine for COVID-19 pneumonia per institutional guidelines. He was found to have an elevated d-dimer level to >3 and received therapeutic anticoagulation therapy with heparin [unfractionated heparin]. His activated partial thromboplastin time (aPTT) was 45–60s and systolic BP was 120–130mm Hg with no medications. On day 18, he had absent brainstem reflexes. A head CT scan showed acute subarachnoid and intraparenchymal haemorrhages in the posterior fossa region. He also developed severe cerebral oedema and uncal, tonsillar and transtentorial herniation. His aPTT on the day of CT scan was 57s. An apnea test showed no respiratory effort after 12 min which confirmed brain death. The cause of death was subarachnoid and intraparenchymal haemorrhage.

Patient 2: A 61-year-old woman, who had a history of type 2 diabetes mellitus, presented with COVID-19 pneumonia and was intubated. During her admission, she received unspecified steroids and off label hydroxychloroquine for COVID-19 pneumonia per institutional guidelines. She also had acute respiratory distress syndrome. Initially, she was started on prophylactic anticoagulation with apixaban. But on day 10, she was then switched to therapeutic heparin, because her d-dimer levels were rising. On day 10 of hospitalisation, physical examination showed fixed dilated pupils without any brainstem reflexes. A CT head showed scattered subarachnoid haemorrhages, diffuse brain anoxia, subdural haematoma with the left to right midline shift and tonsillar herniation. At the time of detection of intracranial haemorrhage, her aPTT was 63s. Subsequently, she was declared brain-dead. The cause of death was scattered subarachnoid hemorrhages.

Patient 3: A 59-year-old woman, who had a history of hypertension, was admitted with COVID-19 pneumonia and was intubated for hypoxic respiratory failure. During her admission, she received unspecified steroids and off label hydroxychloroquine for COVID-19 pneumonia per institutional guidelines. She was started on apixaban as prophylactic anticoagulation therapy and then switched to enoxaparin-sodium [enoxaparin] due to rising d-dimer levels on day 6. She remained in coma stage despite being off sedation for a week. A head CT scan on day 15 showed a large intraparenchymal haemorrhage, cerebral oedema and transtentorial-herniation causing brainstem compression. Apnea test and neurological exam showed brain death. The cause of death was large intraparenchymal haemorrhage.

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