

Desogestrel

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Arterial thrombosis: case report

A 39-year-old woman developed arterial-thrombosis in left anterior cerebral artery, middle cerebral artery and internal carotid artery during treatment with desogestrel as an oral contraceptive.

The woman, with a history of gestational diabetes, was admitted due to a stroke developed during self-isolation at home for COVID-19. She had been receiving oral contraceptive with desogestrel 75µg [*frequency not stated*]. Following the 4 days history of asthenia, ageusia and dry cough, she presented to the emergency room where SARS-CoV2 (COVID-19) infection was diagnosed by reverse transcriptase polymerase chain reaction (RT-PCR) test on a nasopharyngeal swab. Following a diagnosis of mild bilateral SARS-CoV2 pneumonia, she was discharged home on off-label treatment with azithromycin 500 mg/day for 5 days. Additionally, she was receiving enoxaparin-sodium [enoxaparin] concomitantly. On day 6, at 1.55pm, she was admitted to emergency room of another hospital due to a low level of consciousness and right brachiorural hemiparesis. She was found unresponsive at 9am by her husband. Following the admission, she was found to have global aphasia, right-side hemiplegia, right side sensory loss, gaze deviation toward the left side and right homonymous hemianopsia. Her National Institute Health Stroke Scale (NIHSS) scoring was 23. Subsequent simple head CT, CT perfusion scan and angio-CT scans showed a left middle cerebral artery (MCA) and internal carotid artery (ICA) acute ischemic stroke with 60% ischemic mismatch. Due to lack of onset time, she was ineligible for thrombolysis. However, based on perfusion scan findings, she was eligible for mechanical thrombectomy. Therefore, she was transferred to hospital day, with the diagnosis of wake-up left MCA and ICA stroke in probable relation with COVID-19.

The woman subsequently underwent a revascularization procedure. Left MCA recanalization was achieved. At the same time, distal unreachable thrombi in the left anterior cerebral artery (ACA) and repletion defect in the extracranial internal carotid artery were observed, suggesting floating thrombus or, less likely being an arterial dissection. Hence, a Roadsaver stent was placed under lysine acetylsalicylate. Then, she was admitted to the intensive care unit. Eight hours after the thrombectomy, she was under sedation and endotracheal intubation. She developed unreactive dilated left pupil. Subsequent head CT scan revealed a left malignant middle cerebral artery stroke with a midline shift of 10mm. Therefore, she underwent a left decompressive craniectomy. Postoperative day 1, head CT scan was performed which showed midline shift improvement and mild hemorrhagic transformation. Thereafter, she started receiving aspirin. After 48 hours of surgery, sedation was withdrawn. She was alert, obeyed simple and complex commands. However, total motor aphasia, right hemiplegia 0/5, and severe right side sensory loss persisted. Serial follow-up CT scan revealed progressive ventricular size enlargement with progressive neurological worsening, consisting of bradypsychia and drowsiness. On postoperative day 46, a left-side ventriculoperitoneal shunt was placed. On postoperative day 76, she was discharged to a brain injury center. At the time of discharge, she was obeying orders; however mild motor aphasia, right hemihypoesthesia and hemiplegia (2/5) and right homonymous hemianopsia. Neurological status at discharge was assessed as NIHSS 16 and mRS4. She was discharged on aspirin, enoxaparin-sodium, sertraline and metformin. Her electrocardiogram (EKG), transthoracic echocardiogram, Doppler test, procoagulant blood tests were noted to be normal. Based these findings, clinical presentation and after excluding other aetiologies, desogestrel-induced arterial-thrombosis in left anterior cerebral artery, middle cerebral artery and internal carotid artery was considered [*duration of treatment to reaction onset not stated*].