

Bilateral Anterior Cerebral Artery Infarction: A Rare but Catastrophic Stroke Syndrome

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We report a case of a patient who suffered a catastrophic bilateral anterior cerebral artery infarction, a relatively rare stroke syndrome, associated with poor prognosis.

I. Case Report

A 63 year-old right-handed man was referred to the emergency unit of a **hospital** in Calabar, Nigeria, with symptoms of sudden weakness of the left lower limb of 6 days duration, right lower limb weakness of 5 days duration, and loss of consciousness during the last 3 days. His problems started with sudden severe numbness and weakness of the left lower limb on waking in the morning. There was no preceding headache, vomiting or seizures. A day later, the patient noticed similar symptoms on the right lower limb though symptoms remained worse on the left limb. There was no other relevant past medical history. The patient was diagnosed with hypertension seven years prior to the current presentation, and was treated with Ramipril and Amlodipine; however, he was not compliant with follow-up hospital visits.

For the symptoms above, he was admitted into a peripheral centre on the same day of symptoms onset and received antihypertensive medication, dextrose and sedatives because of restlessness. His blood pressure ranged between 160-180/80-100mmHg. The patient lapsed into unconsciousness 3 days after admission and was thus transferred to our larger centre in the same town.

On examination, he was unconscious, febrile (38.8 C), with no pallor, anicteric, and acyanosed. His Glasgow coma scale (GCS) was 3/15. The pupils were normal in size but showed a sluggish reaction to light, doll's eye movement was intact and there was no obvious cranial nerve VII palsy. He had reduced tone on both upper limbs, increased tone on the left lower limb and reduced reflexes on both upper and lower limbs. There were no signs of meningeal irritation or frontal release signs. His heart rate was 88 beats per minute and regular with a blood pressure of 210/90mmHg. There was cardiomegaly with a 4th heart sound but without any murmurs. He had three (4X3cm) infected decubitus ulcers on the gluteal area.

Investigations revealed normal serum glucose levels (8.3mmol/l), leucocytosis (15.2 X10⁹/ul), with neutrophils accounting for 66%. Lipid profile was deranged showing total cholesterol of 7.70mmol/l and LDL cholesterol of 4.98mmol/l. There was hyperuricemia with uric acid level at 0.77mmol/l. INR was 1.16. A non-contrast CT scan of the brain revealed acute bilateral cerebral infarctions in the anterior cerebral artery territories.

A diagnosis of coma due to bilateral ischemic anterior cerebral artery stroke complicated with infected decubitus ulcers was made. The patient was managed conservatively with intravenous mannitol and frusemide, normal saline, vitamin B complex, vitamin C, intravenous ceftriaxone (2g daily), supportive oxygen therapy, daily wound dressing and regular turning as well as application of compression stockings on the limbs. A nasogastric tube was inserted, through which he received oral dipyridamole, vasoprin, artovastatin, allopurinol and feeding. His condition however did not improve and the GCS remained 3/15 until his death on the fifth day of admission to our centre.

II. Discussion

The anterior cerebral artery is one of the major cerebral vessels supplying blood to the medial portions of the frontal lobes, superior medial parietal lobes and corpus callosum. The anterior cerebral artery territory is said to be responsible for 0.3% to 4.4% of cerebral infarctions with bilateral anterior cerebral artery infarct being very rare.^{1,2} Hence the exact incidence of bilateral anterior cerebral artery territory infarction is largely unknown. Bogousslavsky and Regli have reported that out of the 1490 of cerebral infarction cases in the Lausanne Stroke Registry, only 27 cases had anterior cerebral artery territory infarction and only two of these cases had bilateral anterior cerebral artery infarction.³

Typical manifestations of anterior cerebral artery stroke include gait ataxia, urinary incontinence, abulia, weakness of the lower limbs greater than the upper limbs, sensory loss and primitive reflexes.^{4,5} The majority of infarction from the anterior cerebral artery territory (63%) are considered to be due to cardiogenic emboli and artery-to-artery emboli.³ The cause of bilateral anterior cerebral artery infarction has been attributed to vasospasm complicating subarachnoid haemorrhage resulting from rupture of one or more aneurysms of the anterior communicating arteries or distal anterior cerebral artery.¹ Another potential cause of acute bilateral anterior cerebral arteries infarction are unusual vascular variants, including azygos or bihemispheric anterior cerebral artery and hypoplastic A1 segments.⁶ In our patient, unfortunately no form of angiography or MRI was performed to unravel any potential causes.

III. Figure



Figure. Brain CT showing sub-acute, almost symmetrical, bilateral anterior cerebral artery territory infarct. The first two panels are axial, while the third panel coronal CT.

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