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Short Communication

Pheochromocytoma and cerebral fat embolism: Is there a relation?

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The incidence of pheochromocytoma or paraganglioma is noted to be 0.66 cases per 100 000 people per year (highest in age range of 60-79 years).[1] It has an incidence of 0.1% amongst all hypertensives and patients may rarely go into a life-threatening crisis with a mortality rate of upto15%.[2] We here report one such rare incidence in a young lady and in that incident, she had fat embolism which is even more rare.

A 37-year-old woman with no known comorbidity got admission for evaluation of a new onset headache (for seven days) and intermittent surge in blood pressure. She had blood pressure of 160 /90 mm of Hg at presentation, with no other systemic finding except grade IV hypertensive retinopathy. We found her creatinine level to be 1.8 mg/dl. Other blood parameters, including vasculitis markers, were within normal limits. We started amlodipine and controlled blood pressure. On the next day morning, her blood pressure suddenly shot up to 300/100 mm of Hg and she developed status epilepticus. We managed as per standard protocol; intubated and ventilated her. Her cardiac work up was unremarkable, but MRI of the brain revealed fat embolization at multiple sites and post ictal changes (Figure 1). The angiogram and venogram were normal. We gradually brought down her blood pressure and her epileptiform discharges got settled. Unfortunately, she next had a sudden cardiac arrest, which was revived quickly, though. But she remained comatose and her blood pressure started fluctuating and dropped suddenly, requiring vasopressor support. Repeat CT scan showed diffuse cerebral oedema, and we finally lost her next day. We had sent 24 hours urinary metanephrines in doubt for pheochromocytoma (abnormal blood pressure surges on day one) and the 24 hours urinary metanephrines was 526.15 microgram (upper normal limit 312 microgram/24 hours), metanephrine-creatinine ratio was also high 1112.36 (upper normal limit: 300 microgram/creatinine). Though we could not prove it (detail imaging in search of tumour was not possible because of her very unstable state), a bone marrow infiltration of the tumour tissue might have dislodged marrow fat causing possible systemic embolism including cerebral fat embolism (unique feature of our case). The other causes of cerebral fat embolism like long bone fracture, haemoglobinopathies with secondary parvo virus infection, pancreatitis, recent surgery were ruled out. Interestingly, nobody detected her blood pressure to be high in the past. But the unknown surges were silently causing target organ injuries (probably over months to years) until she had the adrenergic storm. There was no significant past or family history. Pheochromocytoma may be a silent killer and we should be suspicious in patients with intermittent episodes of headache, palpitation, chest pain, diaphoresis, pallor, panic attacks.[3] We need to perform 24 hours ambulatory blood pressure monitoring in these patients and search for target organ injury (at least 5% patients of pheochromocytoma are normotensive during presentation).[4]

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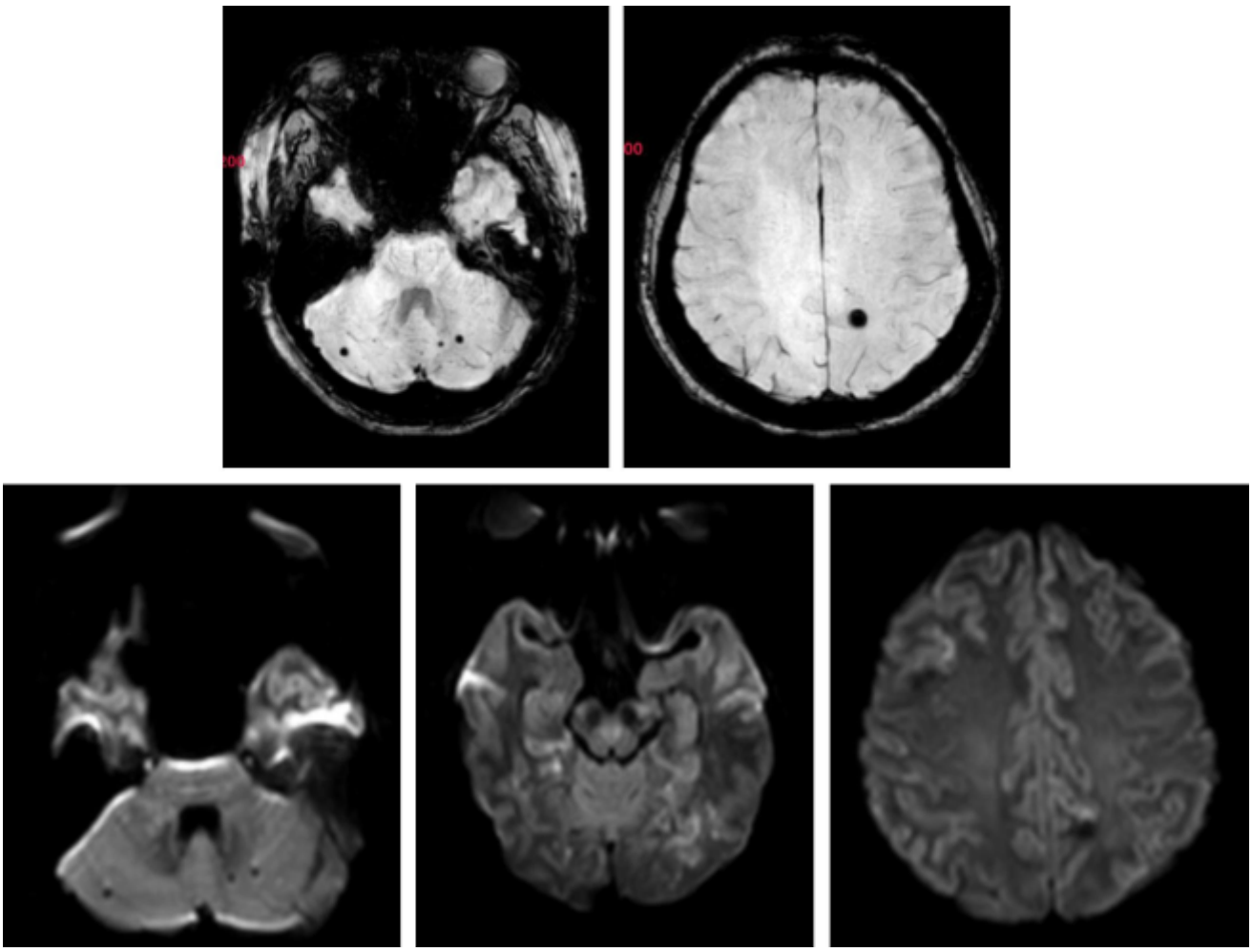

Figure 1: MRI of the brain showing multiple foci of blooming in bilateral cerebellar hemispheres, bilateral frontal lobes, left parietal lobes, left temporal lobe and right thalamus. There is also evidence of DWI restrictions in bilateral frontal, parietal, occipital,temporoparietal gyri and hippocampi suggestive of post ictal changes (had status epilepticus).

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Conflict of Interest

None.

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