

PROMPT AND ACCURATE DIAGNOSIS OF CEREBRO-VASCULAR ACCIDENTS AND DISEASES BY CT AND MRI

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ABSTRACT

Cerebro-vascular diseases or CVA is a condition leading to insufficiency of blood supply to the brain followed by brain anoxia with cerebral infarction ending in life or incapability. The causes may be single or multiple which may be from insufficiency of the arterial supply, venous thrombosis or embolism. Cerebral haemorrhage may be caused from hypertension, diabetes or aneurysm, Arterio-Venous Malformation (AVM) or other Cerebro-vascular diseases which may cause pathology in the brain presenting with a variety of nervous deficiency.

PRESENTATION OF CASES: PROMPT AND ACCURATE DIAGNOSIS CAN BE OBTAINED BY CT AND MRI

CASE I: Cerebral infarction: Rt. Middle Cerebral Artery.

Clinical: Female, age 61 yrs., having a history of hypertension, fell down in the bath room with paralysis of left half of the body.

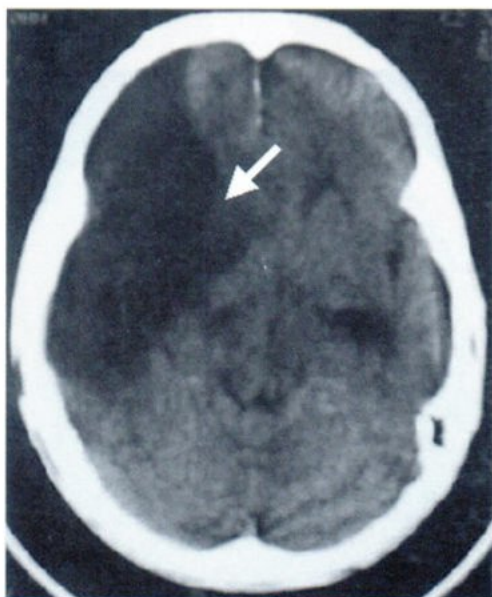


Fig.1A NC.CT.

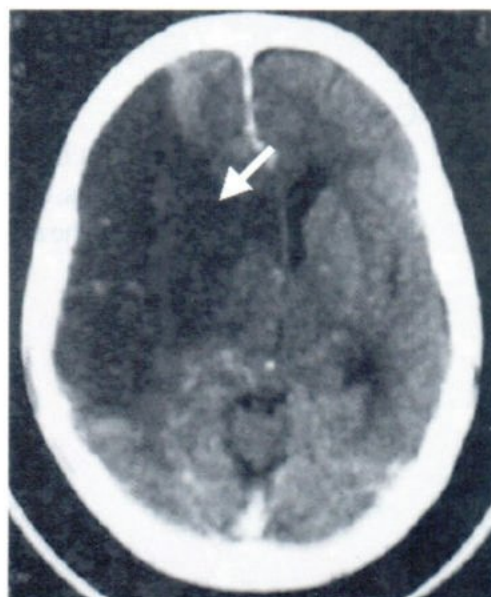


Fig.1B CE.CT.

CT. show black area of Rt. Cerebral hemisphere corresponding to the area supplied by anterior cerebral artery. There was infarction of Rt. cerebral hemisphere with paralyzes of left half of the body. NC.CT. = No Contrast CT., CE.CT. = Contrast Enhancement CT.

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CASE II: Cerebral infarction.

Clinical: Female, age 52 years, with a history of Diabetes and Hypertension, faint and hemi paralysis Rt. half of the body.



Fig. 2A

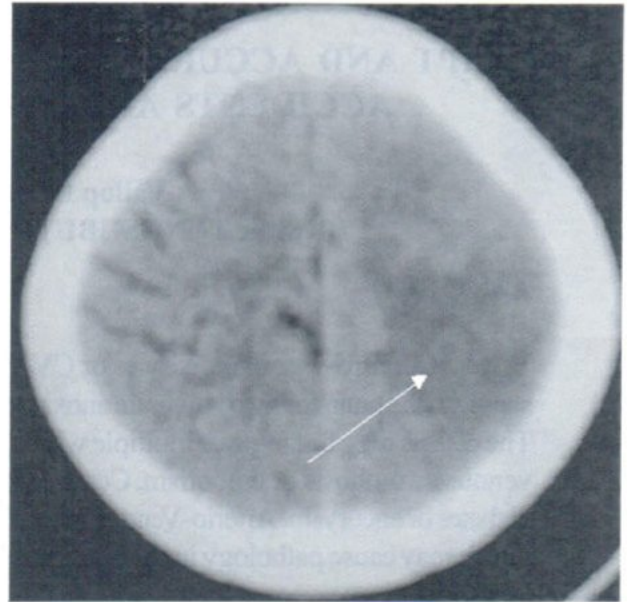


Fig. 2B

CT. show infarction of the Cerebral Cortex, black area, pointed by the white arrow at two different levels, as shown in Fig.2A and Fig.2B.

CASE III: Cerebral infarction.

Clinical: Male, age 65 years, with a history of hypertension for several years, faint and unconscious. After first aid, he recover with Lt. half paralysis.

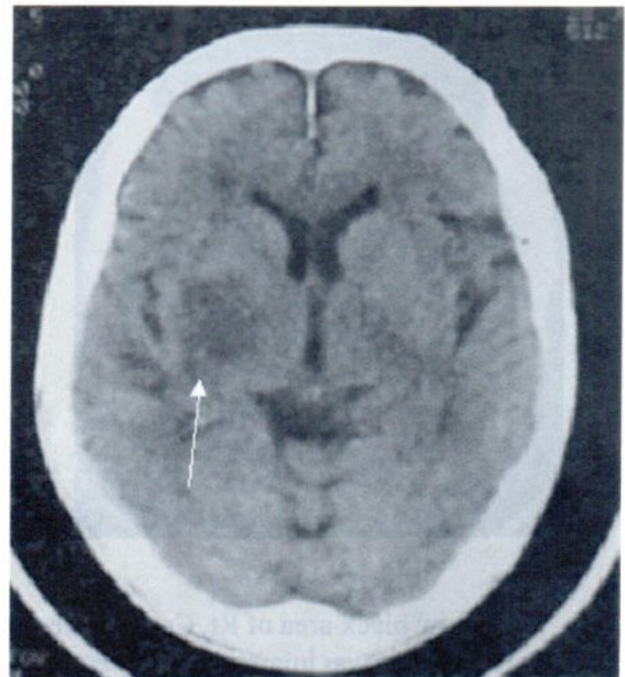


Fig. 3

Fig.3 CT. scan showed cerebral infarction at the Rt. basal ganglia, black area pointed by white arrow. Cerebral angiogram showed obstruction of lenticulostriate arteries from cerebral arterial thrombosis.

CAES IV: Cerebral infarction: Embolic, hemorrhagic infarction.

Clinical: Male, age 70 years sleeping in bed, did not wake up until late in the morning. His daughter wake him up but found him unconsciously lying in bed with semi body paralysis.

CT. showed cerebral infarction of the black area pointed by white arrows, caused by cerebral embolism. Two weeks after that, another CT. was done, 3 small white areas appeared in the black area previously seen. The white areas may be the bleeding in the infarcted areas of the brain after the brain death, and the emboli are dislodged. The bleeding may come from the necrotic arteries where the obstruction of the arteries had taken place previously.

The picture shows NC.CT. taken 2 weeks after the 1st CT.

CASE V: Intracerebral hematoma: basal ganglia.

Clinical: Male 68 years, with a history of hypertension, faint and unconscious with intracerebral haemorrhage and paralysis, left half of the body.

NC.CT. showed white mass indicated by the white arrow interpreted as a hematoma at the Rt. basal ganglia causing Lt. half paralysis.

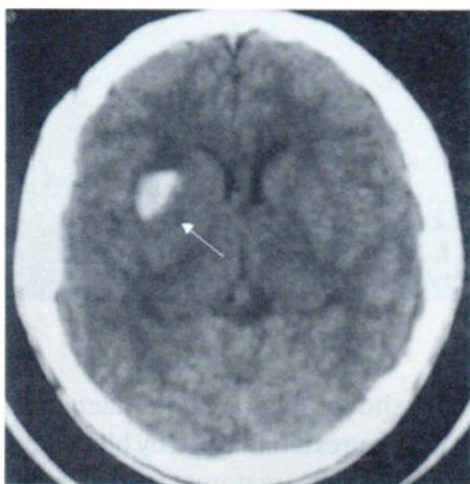


Fig. 5 NC.CT. showed white mass indicated by the white arrow interpreted as a hematoma at the Rt. basal ganglia causing Lt. half paralysis.

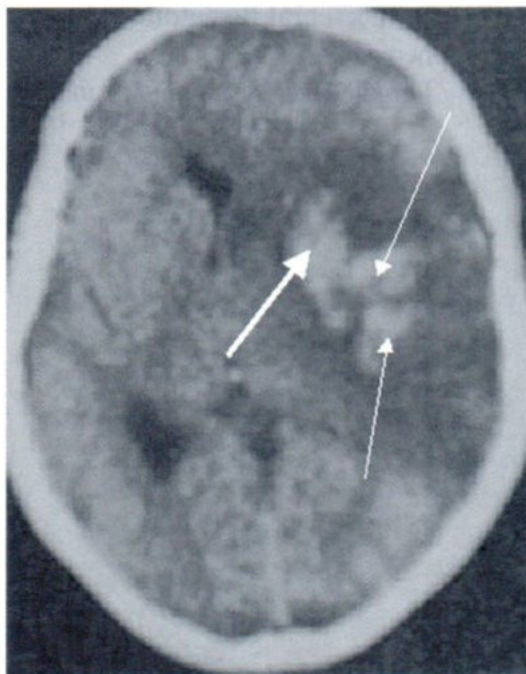


Fig. 4

CASE VI: Intracerebral hematoma: Cerebellum.

Clinical: Male, age 74 years, having a history of Hypertension for several years, faint and unconscious.

NC.CT. showed cerebellar hematoma Rt. side showing by small, long white arrow. There was also hematoma filling into the 4th ventricle, pointed by short, thick white arrow.

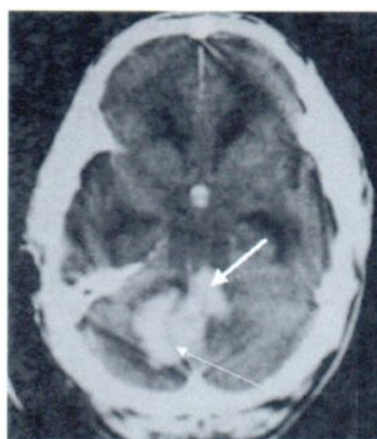


Fig. 6 NC.CT. showed cerebellar hematoma Rt. side showing by small, long white arrow. There was also hematoma filling into the 4th ventricle, pointed by short, thick white arrow.

CASE VII: Intracerebral hematoma: Brain stem hematoma.

Clinical: Female, age 78 years, faint and unconscious.

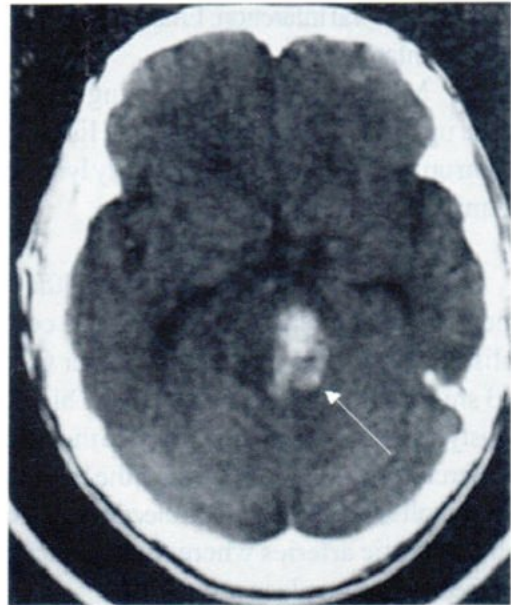


Fig. 7 CT. without contrast, a white mass of hematoma is found at the brain stem, at Pons.

CASE VIII: Subarachnoid Hemorrhage: Rupture Aneurysm.

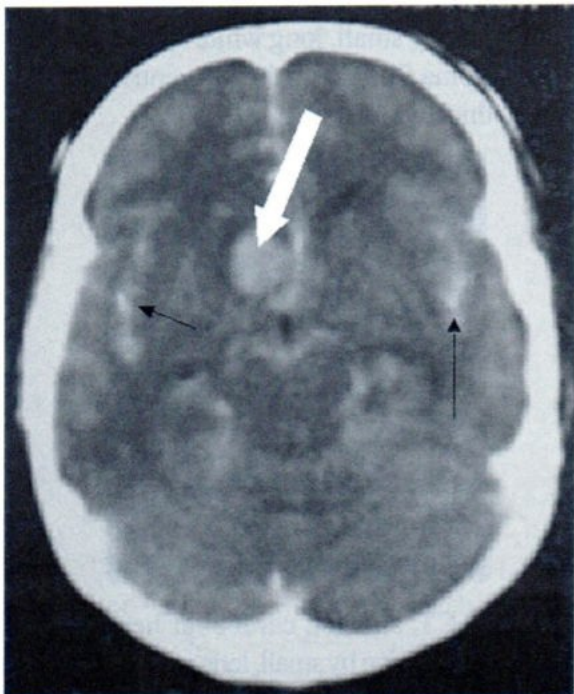


Fig. 8A CT.

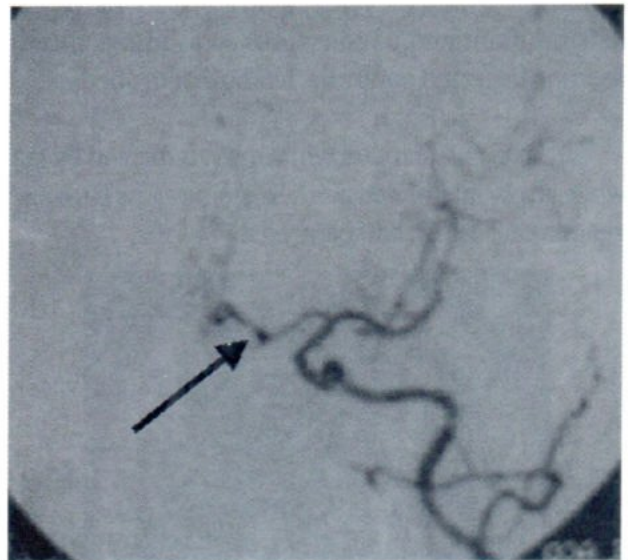


Fig. 8B DSA.

CT. shows subarachnoid haemorrhage at both sylvian fissures as indicated by black arrows and also intracerebral haematoma near the position of aneurysm, white arrow. Picture from digital subtraction angiography show the position of ruptured aneurysm as pointed by the black arrow.

CASE IX

Clinical: Patient, old ages and debilitated, has venous thrombosis in the brain because of bed ridden.

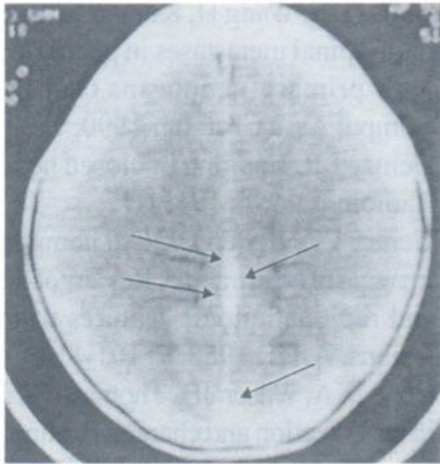


Fig. 9 NC.CT. shows venous thrombosis as pointed by black arrows.

CASE X: Cerebral venous thrombosis.

Clinical: Female taking birth control pills., age 40 years. She took sleeping pills by mistake and never wake up.

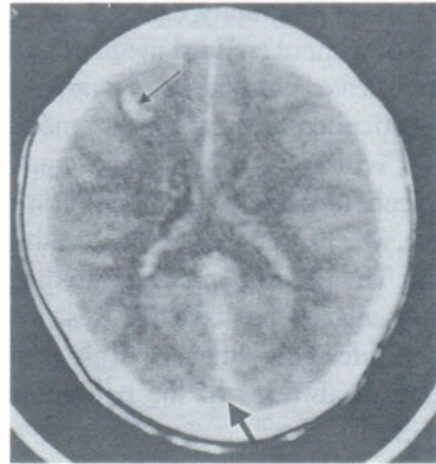


Fig.10 CT. show petichial hemorrhage at frontal lobe as indicated by small black arrow. There is also thrombus in the superior sagittal sinus as indicated by thick, short arrow called delta sign or empty triangular sign. "delta sign" is a special name for superior sagittal sinus thrombosis.

CASE XI: Arterio-Venous Malformation.

CT. showing congenital mal-formation having AVM in the brain, making nervous deficit of the brain functions in the areas replaced by AVM.

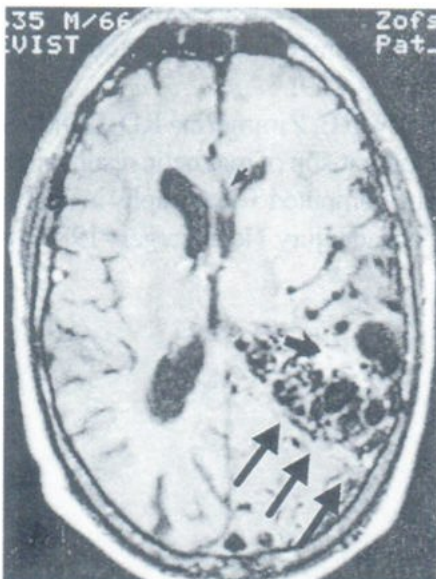


Fig.11A NC.CT. showed Arterio-Venous Malformation (AVM) at left side of the brain (black arrows).

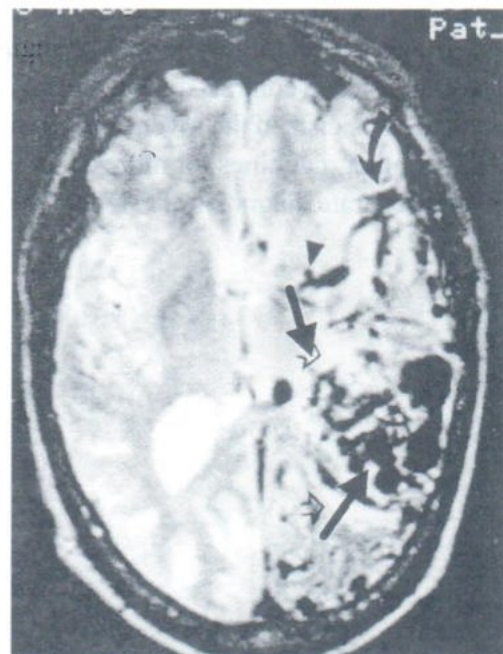


Fig.11B CE.CT. showed AVM which replaced normal brain causing nervous deficit to the patient.

DISCUSSION

Prompt and accurate diagnosis of cerebro-vascular accidents or diseases, now-a-day, apart from cerebral angiography, can be done by CT and MRI with or without contrast media. The more and more sophisticated machine of CT. and MRI. and the more investigations of new contrast media for CT. and MRI., will help both the physicians and the neurosurgeons to make the right decision in giving the treatments, whether, surgical or conservative medical treatment. The prompt and accurate diagnosis of cerebro-vascular accidents or diseases, not only, we can save the life of the patients, but also can save the permanent disabilities of the patients in future surviving life.

11 cases

CONCLUSION

Further progresses of Roentgen Diagnosis using CT. and MRI. needs more attentions and co-operation of multidisciplinary scientists, not only the medical professions, neurologists, neurosurgeons, and neuro-radiologists, but also the pharmacists specially interested in contrast media, the engineers and medical physicists in the invention of new CT. and MRI. or other machines for more economical, prompt and accurate diagnosis of CVA or diseases.

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