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Clinical Picture

A Case Report of Acute Cerebrovascular Accident and Pituitary Macroadenoma

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Abstract: The clinical state of acute onset of neurologic impairment induced by ischemia or bleeding is known as acute cerebrovascular accident / stroke. Neuroimaging is critical in distinguishing between ischemic and hemorrhagic strokes. In the treatment of individuals with acute ischemic stroke, advanced neuroimaging has become critical. Pituitary apoplexy is a syndrome characterised by a sudden onset of headaches, vision loss, pituitary dysfunction and altered consciousness. Here, we introduced the case of acute cerebral ischemia with incidental finding of pituitary macroadenoma. Pituitary macroadenoma is a common malignancy in persons in their forties and fifties. The study of choice for its examination is magnetic resonance imaging (MRI). A noninvasive diagnosis can be made by studying many parameters such as extent, consistency, and contrast uptake.

Key words: Stroke, cerebrovascular accident, CT angiography, pituitary apoplexy, MR imaging, thrombolysis.

INTRODUCTION

60-year-old male was brought to our hospital with complaints of weakness of right upper limb and lower limb which was sudden in onset, inability to speak and unable to stand on his own. He is a known case of type 2 diabetes mellitus on medication and known alcoholic and recently diagnosed hypertensive.
Physical examination: conscious, aphasic, obeys commands.
GCS – E4 V1 M6 (11/15)
Blood pressure: 180 / 100 mm Hg
Blood investigations: normal

A CT Brain study was done and shows a large intra parenchymal hemorrhage measuring~ 5.0 x 3.1 cm noted in the left posterior and parietal lobe. Chronic lacunar infarct in the left corona radiata and right gangliocapsular region. Incidentally we found a well defined solid-cystic lesion measuring~ 3.0 x 2.5 x 2.5 cm(CC x AP x TV) in sellar and suprasellar region.

MRI – BRAIN confirms all CT findings and shows no flow within the left transverse and proximal sigmoid sinus on the left side due to thrombus T1 hyperintense signal seen within the left transverse and proximal sigmoid sinus with lack of normal T2 hypointensity of the flow void – venous sinus thrombosis to be considered.

The sellar lesion is seen exerting mass effect on the optic chiasma, infundibulum and interpeduncular cistern.

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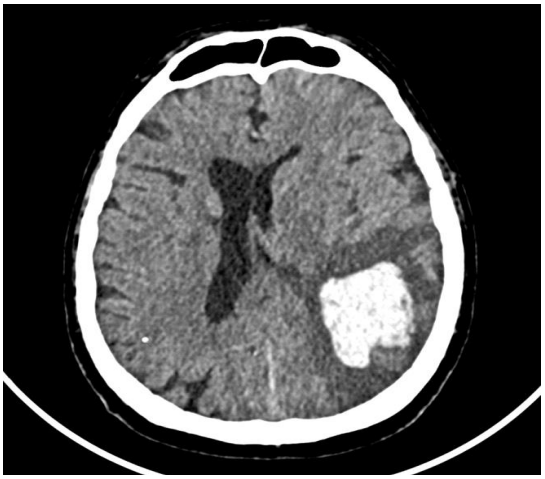
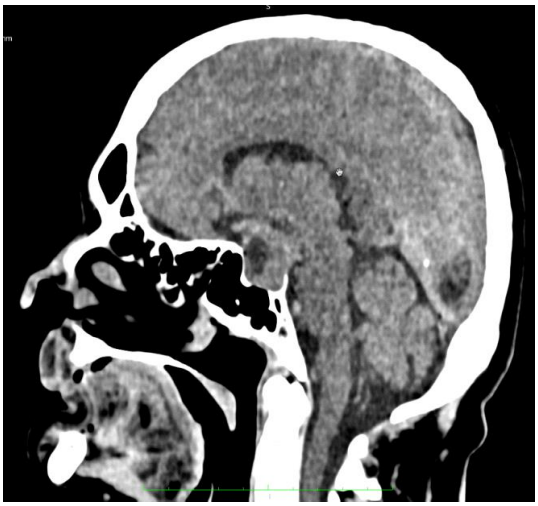
Imaging Features
CT – BRAIN (axial plain)

A large intra parenchymal hemorrhage



Mass effect causing compression of ipsilateral lateral ventricle and dilatation of contralateral lateral ventricle

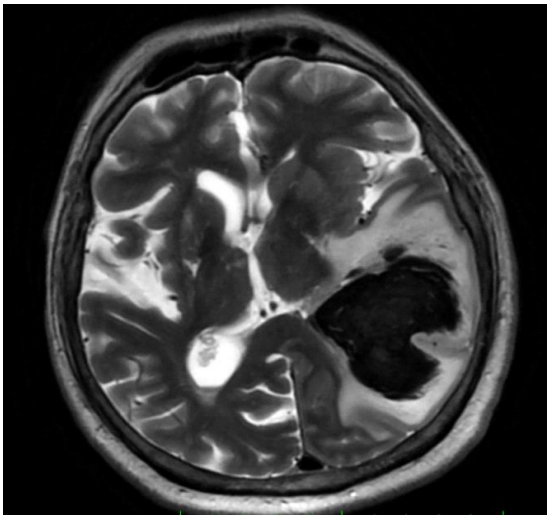
CT – BRAIN (sagittal plane)



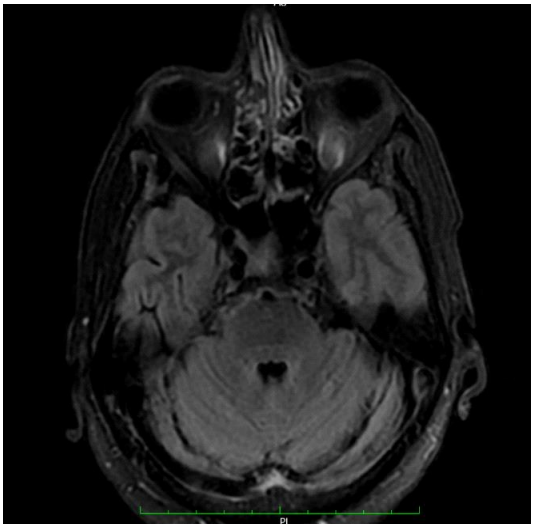
A well defined solid-cystic lesion sellar and suprasellar region

Suprasellar lesion with expansion of sella in and causing mass effect on optic chaisma and infundibulum

MRI-BRAIN

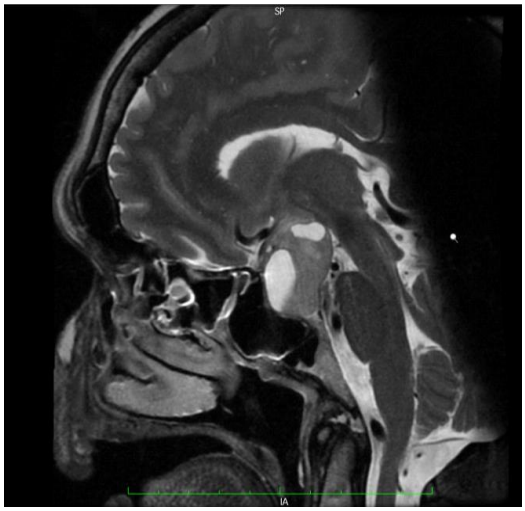


Axial T2: Acute intraparenchymal hemorrhage the left posterior, temporal and parietal lobe appears hypointense on T2



Axial T2 FLAIR: No flow within noted in the left transverse sinus (due to thrombus lack of normal T2 hypointensity of the flow void)

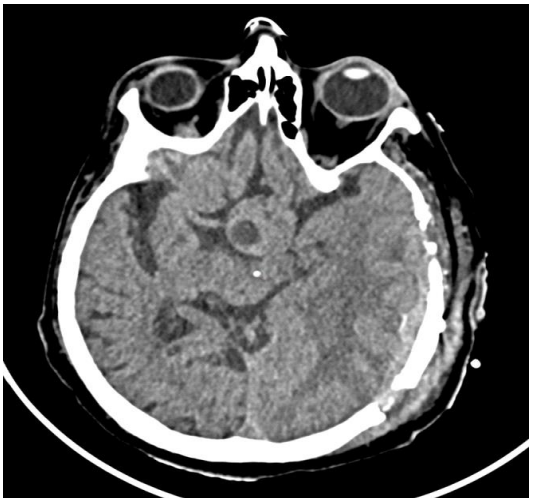
MRI-BRAIN (Sagittal T2)



A well defined solid cystic lesion measuring~ 3.0 x 2.5 x 2.5 cm (CC x AP x TV) noted in the sellar and suprasellar region with expansion of the sella and mass effect on the infundibulum, optic chiasma and interpeduncular cistern Pituitary macroadenoma with cystic degeneration may be considered

Post-operative CT-BRAIN

Residual intraparenchymal hemorrhage left temporo-parietal region



Burr hole craniectomy defect in andsubdural hematoma in left parietal Region

Treatment

- Emergency decompressive craniotomy.
- Post operative patient is conscious, oriented and managed conservatively by anti-coagulants and anti hypertensive drugs.
- No surgical intervention is done for pituitary macroadenoma as the patient is asymptomatic.

DISCUSSION

Acute cerebrovascular accident/stroke is a very urgent and fatal disease that requiring accurate diagnosis and prompt treatment [1]. Common risk factors are hypertension, diabetes mellitus, hypercholesterolemia, smoking, physical inactivity, obesity. All the risk factors can lead to raised levels of LDL in arteries supplying brain resulting in atherothrombotic plaque formation which blocks the arteries leading to ischemia of brain. Most patients with symptomatic acute cerebral ischemia reported were secondary to pituitary apoplexy. Pituitary macroadenoma (>10mm) is the most common suprasellar mass in adults and responsible for acute cerebrovascular accident. Tumor is relatively slow growing, therefore, in the case of normal cerebral vessels, acute ischemic stroke rarely occur even with a large suprasellar tumor [1]. Large-artery atherosclerosis (most commonly from the cervical carotid arteries), cardioembolism (secondary to clot formation in the heart), small-vessel occlusion (lacunar infarct, which is less than 20 mm in diameter), stroke of other determined cause (such as dissection, nonatherosclerotic vasculopathies, or global hypoperfusion), and stroke are the five subtypes of ischemic stroke.

Because of its ease of use and quick acquisition time, non-contrast computed tomography (NCCT) is the standard initial diagnostic investigation in most stroke centres across the world. CT angiography (CTA) can be done immediately after an NCCT and takes very little time, allowing for efficient imaging of the cerebral vasculature. Identification of an intracranial arterial occlusion on CTA, in the presence of acute focal neurological deficits, generally confirms the diagnosis of acute ischemic stroke [8]. During the early disease phase, cranial MRI is more useful than CT [2].

In spite of the fact that there have been a few reports, acute cerebrovascular accident along side pituitary apoplexy is still exceptionally uncommon. In the event that ischemic stroke is related with large pituitary adenoma, emergency conventional angiography is indispensable for exact conclusion. In addition, emergency decompression surgery ought to be the primary choice when the cause of acute ischemic stroke was thought to be coordinate compression due to parasellar mass [1].

CONCLUSION

Unexpected onset of a central neurologic shortage regularly characterizes the clinical disorder of stroke. Neuroimaging has an fundamental part within the appraisal of patients with suspected stroke, by separating ischemic from hemorrhagic stroke, distinguishing stroke mirrors, and directing understanding determination for accessible therapies. We conclude that the information of clinical and imaging profile of pituitary macroadenoma can offer assistance to the radiologists to analyze these sellar injuries and thus their therapeutic approach can be characterized timely.

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Ethical approval: All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

Informed consent: Informed consent was obtained from individual participant included in the study.

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