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## A Rare Case of Reversible Dementia In Old Age

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### ABSTRACT

Normal pressure hydrocephalus(NPH)is one of the few causes of dementia that is potentially reversible. NPH can present with various degrees of dementia which are reversible and gait abnormalities. NPH is characterized with dementia, gait disturbance, bladder abnormalities. Dementia will be a progressive dementia with bladder incontinence. Usually dementia with one of the additional feature will lead to the diagnosis of NPH.CT-Brain gives the diagnosis for the presentation of dementia in NPH. Large volume lumbar puncture and lumbar drainage is the treatment

**Keywords:** Reversible dementia, bladder incontinence, gait disturbance.

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**CASE REPORT****History:**

A 70 year old female presented with complaints of lack of attention, memory loss, urinary incontinence, irrelevant speech which was progressively increasing in nature with 6 months duration. Patient was apparently normal 6 months back and developed loss of memory associated with urinary incontinence and irrelevant speech. History of forgetfulness during initial period which progressively increased even not able to recognize her close relatives and her own son, in which the history is given by her son. She was not able to do her daily routine activities such as cooking ,wearing dress by her own, taking bath, going alone to a nearby place which she was doing before. History of poor personal hygiene developed. Patient attenders noticed she passes urine unknowingly in the bed which was progressively increased in recent times and also passes urine in the mid way when she was taken to bathroom. Irrelevant speech developed associated with change in walking habits. Gait abnormalities developed with short steps and broad based gait. No history of bladder abnormalities, weakness. Sensory loss cannot be elicited as she was not responding to the history asked to her.

**Examination:**

She was thin built and poorly nourished. Vitals were stable. Pupils reactive 2-3mm. Neurological examination revealed she is right handed individual with normal consciousness, not co-operative, lack of attention was present and having emotional variation with irrelevant speech and non-comprehensive. No cranial nerve abnormalities. Sensory findings was difficult to elicit. Motor examination was normal. No signs of meningism and cerebellar dysfunction.

On investigation, haemogram showed low haemoglobin (10.5 g/dl) with MCV 65 and peripheral smear showing microcytic hypochromic picture with anisopoikocytosis. Urea was 15 mg/dl, creatinine was 0.7 mg/dl and blood sugar level was 84 mg%. The liver function tests showed total bilirubin of 1.2 mg/dl with direct bilirubin of 0.7 mg/dl. SGOT and SGPT were in normal range. Urine R/E showed 8-10 pus cells.

Chest X-Ray PA was normal. ECG was in normal sinus rhythm. Fundus examination revealed no signs of papilloedema.

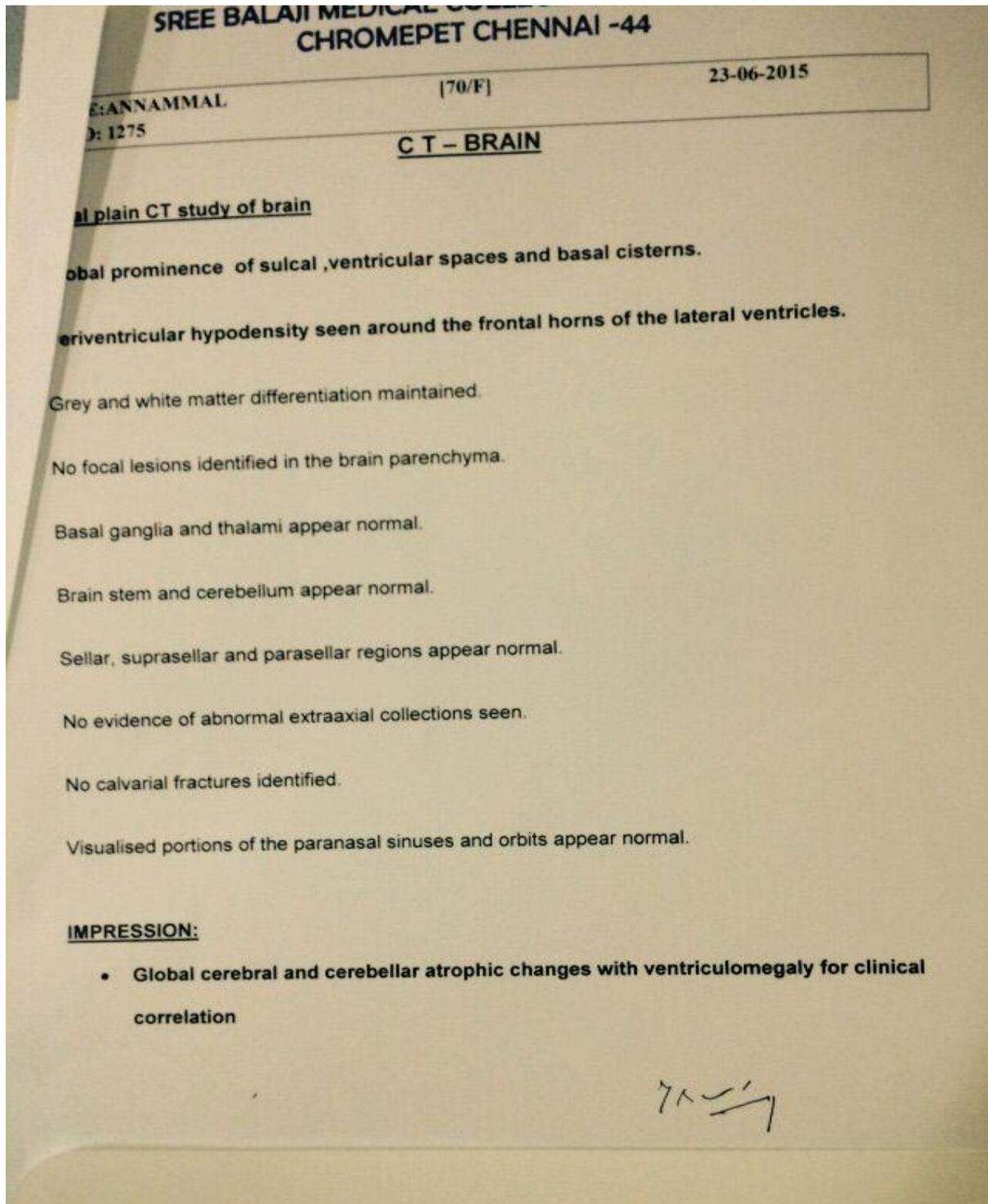
CT-Brain done which showed normal Grey matter and white matter. No focal lesions in brain parenchyma. Basal ganglia and thalami appear normal. Brain stem and cerebellum appear normal. Sellar, suprasellar and parasellar regions appear normal. No evidence of abnormal extraaxial collections seen. No clavial fractures identified. Visualised portions of the paranasal sinuses and orbits appear normal. Global prominence of sulcal , ventricular spaced and basal cisterns. Periventricular hypertrophy seen around the frontal horns of the lateral ventricle.



Impression; Global cerebral and cerebellar atrophic changes with ventriculomegaly seen.



CT-Brain showing enlarged ventricle in case of normal pressure hydrocephalus.



#### CASE DISCUSSION

This is a rare case of reversible dementia in normal pressure hydrocephalus. Normal pressure hydrocephalus(NPH),also termed as symptomatic hydrocephalus is a type of brain abnormality caused by decreased absorption of cerebrospinal fluid(CSF).Typical symptoms include progressive [1,2,9]dementia which is reversible, urinary incontinence, gait abnormalities. It is difficult to diagnose because the symptoms are common are common to several other diseases. There are 2 types of NPH[3] idiopathic and secondary. The secondary type of NPH is due to subarachnoid haemorrhage, head trauma, tumor, infection in central nervous system or a complication of cranial surgery.

NPH is caused by an increase in intracranial pressure(ICP)due to an abnormal collection in CSF in the ventricles of the brain, which can cause the ventricles to enlarge(ventriculomegaly).The intracranial pressure gradually falls but still remains slightly elevated, and the CSF pressure reaches a high normal level of 150-200mm H<sub>2</sub>O.NPH may exhibit a classic triad of dementia, urinary incontinence, gait abnormality. Dementia is predominantly frontal lobe in nature with features of forgetfulness, inattentionand decreased manipulation of knowledge gained. Memory problems are usually a problem in alzheimers in old age but this type of dementia is mostly reversible as the CSF pressure is relieved.[4,7]Gait is typically with short steps with unsteadiness and broad based gait.[5,6,8]Urinary incontinence appears later part of illness as the frontal lobe is involved. This is also called Frontal lobe incontinence.

CT-Brain[10] is the gold standard diagnosis in Normal pressure hydrocephalus(NPH)showing enlarged ventricles without convolutional atrophy. CSF drainage and surgical intervention is the appropriate treatment for NPH. When the CSF pressure is drained the persisting symptoms will gradually decline and dementia will reverse.

In this case with the 70 year old lady with all the symptoms of NPH of reversible dementia. gait abnormality, bladder incontinence with CT-Brain showing enlarged ventricles prompt to a diagnosis of Normal Pressure Hydrocephalus(NPH).

### CONCLUSION

In conclusion, Dementia are common and mostly irreversible in old age with many causes, most commonly being the Alzheimers disease,Tumors in brain etc. But in case of Normal Pressure Hydrocephalus when diagnosed the cause for dementia, it can be reversible when the CSF pressure is drained. Thus this is a rare case of reversible dementia in old age people.

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