

DEFINITION

1. **Hydrocephalus** refers to the net accumulation of cerebrospinal fluid (CSF) within the cerebral ventricles and the consequent enlargement of the ventricles.
2. In **acute obstructive hydrocephalus** there is usually a sudden increase in the intraventricular pressure. In **chronic hydrocephalus** the CSF pressure is frequently normal or low.
3. Hydrocephalus is classified as **communicating** or **non-communicating** according to whether or not there is communication between the lateral ventricles of the brain and the spinal subarachnoid space.

CLINICAL MANIFESTATIONS

4. In acute obstructive hydrocephalus the patient has severe headache, lethargy, signs of increased intracranial pressure and signs of the causative lesion. Increased reflexes and bilateral extensor plantar responses are almost invariably present. The CSF pressure in the ventricles is markedly increased but if the CSF pathways are blocked, this will not be transmitted to the lumbar subarachnoid space.
5. In chronic communicating hydrocephalus (including normal-pressure hydrocephalus) there is progressive dementia, characterised by forgetfulness and psychomotor retardation, unsteady gait and urinary incontinence. Apathy, hypophonia and bilateral pyramidal and extrapyramidal signs may be present. The lumbar CSF pressure is usually normal or near normal. Recordings of the ventricular CSF pressure may reveal intermittent waves of elevated pressure.

AETIOLOGY

6. The accumulation of fluid within the ventricles results from one or more of the following factors –
 - 6.1. obstruction to the flow of CSF
 - 6.2. impaired absorption of CSF
 - 6.3. excessive production of CSF
7. Potential causes of acute hydrocephalus are –
 - 7.1. cerebellar haemorrhage or infarction
 - 7.2. colloid cyst of the third ventricle
 - 7.3. exudative meningitis
 - 7.4. head trauma

- 7.5. intracranial tumour or haematoma
- 7.6. spontaneous subarachnoid haemorrhage
- 7.7. viral encephalitis
8. Potential causes of chronic hydrocephalus are –
 - 8.1. aqueductal stenosis
 - 8.2. ectasia and elongation of the basilar artery
 - 8.3. granulomatous meningitis
 - 8.4. head trauma
 - 8.5. hindbrain malformations
 - 8.6. meningeal carcinomatosis
 - 8.7. spinal cord tumours
 - 8.8. spontaneous subarachnoid haemorrhage
 - 8.9. syringomyelia
9. In many cases of chronic hydrocephalus the cause cannot be determined.

CONCLUSION

10. **Hydrocephalus** is a condition which results from an accumulation of cerebro-spinal fluid within the ventricles of the brain. There are various causes, these having been listed above, but, in many cases, a cause cannot be identified.

REFERENCES

Walton Sir John. Brain's Diseases of the Nervous System. 9th Ed. 1985. Oxford. Oxford University Press. p137-142.

Vick N A and Rottenberg D A. Disorders of Intracranial Pressure – Hydrocephalus. In: Wyngaarden J B, Smith L H and Bennett J C (Eds). Cecil Textbook of Medicine. Philadelphia. W B Saunders Company. 19th Ed. 1992:2223-2224.

December 1992