Chronic hydrocephalus

Features indicative of chronic hydrocephalus (as opposed to acute hydrocephalus):

1. beaten copper cranium (some refer to beaten silver appearance) on plain skull X-ray. By itself, does not correlate with increased ICP, however, when associated with #3 and #4 below, does suggest ↑ ICP.

May be seen in craniosynostosis

2. 3rd ventricle herniating into sella (seen on CT or MRI)

3. erosion of sella turcica (may be due to #2 above) which sometimes produces an empty sella, and erosion of the dorsum sella

4. the temporal horns may be less prominent on imaging than in acute HCP

5. macrocrania: by convention, OFC greater than 98th percentile

6. atrophy of corpus callosum: best appreciated on sagittal MRI

7. in infants

a) sutural diastasis

b) delayed closure of fontanelles

c) failure to thrive or developmental delay

Chronic hydrocephalus is a complex condition, the incidence of which increases with increasing age. It is characterised by the presence of ventricular enlargement in the absence of significant elevations of intracranial pressure. The clinical syndrome may develop either as a result of decompensation of a “compensated” congenital hydrocephalus, or it may arise de novo in adult life secondary to a known acquired disturbance of normal CSF dynamics. The latter may be due to late onset aqueductal stenosis or disruption of normal CSF absorptive pathways following subarachnoid hemorrhage or meningitis (“secondary” normal pressure hydrocephalus (NPH)). In some cases the cause of the hydrocephalus remains obscure (“idiopathic” NPH). In all forms of chronic hydrocephalus the clinical course of the disease is heavily influenced by changes in the brain associated with aging, in particular cerebrovascular disease. Recent research has challenged previously held tenets regarding the CSF circulatory system and this in turn has led to a radical rethinking of the pathophysiological basis of chronic hydrocephalus [1)].

see Arrested hydrocephalus.

A new entity of chronic hydrocephalus was introduced in the international literature: longstanding overt ventriculomegaly in adults. Previous experience with this disorder has demonstrated that shunt therapy for such patients involves a considerable risk of overdrainage.

Normal pressure Hydrocephalus

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1)

Edwards RJ, Dombrowski SM, Luciano MG, Pople IK. Chronic hydrocephalus in adults. Brain Pathol. 2004 Jul;14(3):325-36. Review. PubMed PMID: 15446589.