St Vincent's Neuroscience

ARACHNOID CYST

A thick protective layer called the meninges surrounds the brain. The meninges are made up of 3 distinct layers which develop embryologically. The outermost layer is the dura, the middle layer the arachnoid and the innermost layer directly adjacent to the brain and blood vessels is the pia.

An arachnoid cyst is a congenital benign condition resulting from the splitting of arachnoid layer of the meninges. It is invariably slow growing and consists of clear fluid similar in composition to CSF.

CAUSE

A primary arachnoid cyst is a congenital condition usually present from birth although later developments in adolescents has been described. Secondary arachnoid cysts may form later in life due to sequestration of CSF from processes such as inflammation or trauma. They are often discovered incidentally and are usually classified depending on their location in the skull cavity.

SIGNS AND SYMPTOMS

An arachnoid cyst is usually asymptomatic but may cause generalised symptoms like a space-occupying lesion, or more specific symptoms from localised pressure.

- Raised intracranial pressure – progressive enlargement may cause an arachnoid cyst to act like a slow-growing tumour. Headaches and neck-pain, nausea and vomiting, tiredness/lethargy and confusion may result from the raised intracranial pressure
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- Focal neurological deficit – Localised pressure may lead to specific neurological deficits, ie weakness, numbness, speech disturbance, disco-ordination. Occasionally arachnoid cysts in the region of the pituitary may lead to pituitary dysfunction and symptoms from hormonal deficit.
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- Seizures may occur depending on the location of the cyst.

The symptoms related to arachnoid cysts are usually progressive over many years. More acute symptoms may result with bleeding from the vascular wall of the cyst either spontaneously or due to shearing forces from head trauma.

INVESTIGATIONS

- Blood tests – there are no specific blood tests to diagnose an arachnoid cyst. Routine FBE, electrolytes and clotting profiles will be performed prior to operative removal of an arachnoid cyst.

- Radiological tests

    - CT head – an arachnoid cyst may be discovered incidentally following a scan of the head for another cause
    - MRI head – an MRI gives higher definition of the cyst and is used to help plan surgical treatment if needed. It is also helpful in distinguishing between a benign arachnoid cyst and a cystic brain tumour.

If discovered incidentally, there is usually no indication for neurosurgical intervention. However if it is the cause of raised intracranial pressure or neurological deficits neurosurgical intervention will be indicated.

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