



## Perspective

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# Diagnosis of Arachnoid Imaging Cyst

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## Introduction

Arachnoid cysts are a common form of incidentally discovered lesion in the brain during imaging. Arachnoid cysts are most commonly found in the anterior/middle cranial fossa or in the retro cerebellar area. The cause of most arachnoid cysts is uncertain, but they most likely form during development. These cysts are fluid-filled lesions that can be tiny or massive. Even broad arachnoid cysts are often found in the absence of symptoms. However, many symptoms have been linked to the mass effect caused by an arachnoid cyst, and the arachnoid cyst may need treatment due to the structural distortion and neurological symptoms it causes.

## Etiology

Although the cause of arachnoid cyst formation is unknown, arachnoid cysts are thought to be caused by irregular arachnoid splitting during embryogenesis. If inflammatory cells, excess collagen, or hemosiderin staining are present on histopathology, an inflammatory or traumatic aetiology is suspected [1]. Due to mass effect, underlying gliosis is rarely observed in the adjacent brain. Aicardi syndrome, mucopolysaccharidosis, acrocallosal syndrome, Marfan syndrome, and a missense mutation are some of the syndromes that have been linked to arachnoid cysts.

## Histopathology

Arachnoid cysts are made up of a thin membrane. The wall has been found to be variable histologically, but mostly composed of arachnoid. Fibrous tissue with a plain epithelial lining has also been discovered inside arachnoid cysts, as well as non-arachnoid luminal epithelia with abundant microvilli and/or cilia [2].

## History

There has been a broad variety of recorded percentages of symptomatic and asymptomatic cysts, and the reported incidence would be highly dependent on the population in which it is measured. The arachnoid cyst's position is very variable, with a distinct dominance of lesions located in the middle cranial fossa and retrocerebellar positions. Cysts are found in smaller numbers at the convexity and in the suprasellar area.

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The cerebellopontine angle, intraventricular space, supracerebellar cistern, quadrigeminal cistern, ambient cistern, anterior fossa, and brainstem have the lowest incidence of lesions. If a patient is referred to a referral centre because of symptoms, the arachnoid cyst is usually discovered by chance [3]. The most common cyst positions in the middle cranial fossa and retro cerebellar area, fortunately, are not linked to symptoms. Arachnoid cysts, on the other hand, cause a wide range of symptoms due to their relatively frequent occurrence and the numerous places where they can be found.

## Treatment

The vast majority of arachnoid cysts do not need medication. When it's determined that an arachnoid cyst is causing or is most likely causing symptoms, there are a variety of surgical options. The surgical method is often determined by the cyst's location and the presence (or lack thereof) of surrounding neurological structures. When the lesion is easily amendable, surgical excision of the wall is done with the formation of contact with the subarachnoid space.

## Differential Diagnosis

**Prognosis:** vast majority of the time, no treatment is needed. Surgery is almost always curative when it is required, however recurrences have been confirmed.

**Patient Education:** Patients should be told that the vast majority of arachnoid cysts are unrelated to the patient's health and that no treatment is needed. Except under exceptional circumstances does an arachnoid cyst necessitate care.

**Complication:** An arachnoid cyst normally does not cause any complications. If an arachnoid cyst causes a rare complication, it depends on where it is located and what anatomical form is distorted by the arachnoid cyst. A ruptured arachnoid cyst may also result in subdural hygromas or hematomas, all of which require treatment

## References

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