

Pseudomeningocele

Abnormal collection of [cerebrospinal fluid](#) (CSF) that communicates with the CSF space around the brain or spinal cord.

Pseudomeningocele is the term used to describe fluid accumulation due to the leakage of cerebrospinal fluid into the surrounding soft tissue.

Etiology

[Iatrogenic pseudomeningocele](#)

[Traumatic Cervical Pseudomeningocele](#)

Diagnosis

Pseudomeningocele on myelography or MRI: suggests [nerve root avulsion](#) (very proximal); however, 15% of pseudomeningoceles are not associated with [avulsions](#), and 20% of avulsions do not have pseudomeningoceles ^{1) 2)}.

Determining the exact location of dural violation after traumatic pre-ganglionic ([avulsion](#)) injury of the [brachial plexus](#) with associated progressively enlarging [pseudomeningocele](#) is critical for treatment, but current imaging by MR and [CT myelogram](#) remains inadequate as there are often only indirect imaging features. Lee et al. published the first case of using dynamic CT myelography to visualize "CSF flow jet," revealing the exact location of dural violation resulting in the expanding pseudomeningocele, providing crucial information for perioperative planning ³⁾.

Differential diagnosis

post-op [Spinal epidural abscess](#) may appear similar to pseudomeningocele ⁴⁾.

In contrast to a [meningocele](#), in which the fluid is surrounded and confined by dura mater, in a pseudomeningocele, the fluid has no surrounding membrane but is contained in a cavity within the soft tissues.

Complications

It may cause complications such as cosmetic deformities, chronic meningitis, and/or impingement on vital structures resulting in neurological deficits; nevertheless, life-threatening posterior fossa cyst formation is a rare event.

Treatment

Treatment for pseudomeningocele is conservative or may involve neurosurgical repair.

Postoperative pseudomeningocele

Pseudomeningocele is a known operative complication of Chiari decompression with significant morbidity.

Case series

2015

A retrospective analysis of 150 consecutive patients from November 1991 to June 2011 was conducted. Symptomatic pseudomeningocele was defined clinically; to meet definition it must have required operative intervention. Variables evaluated included sex, age, use of graft, and use of operative sealant. The Chi-square, Fisher test, and the two-sample t-test were used as appropriate to determine significance. Multiple logistic regression was used to determine independent risk factors for complication.

A total of 67.3% of patients were female, with average age being 39.7 years. A total of 67.3% of patients had a graft placed with the most common being fascia lata. Only nine patients (6%) presented with pseudomeningocele. Factors observed to be significantly associated with pseudomeningocele development were age and use of sealant. Age and sealant use were also independent risk factors for complication. Adjusted for the significant effect of age, odds for complication among patients with sealant usage were 6.67 times those for patients without sealant. Adjusted for the significance of sealant usage, there is a 6% increase in odds for complication for every year increase in patient's age.

A statistically significant relationship exists between age and sealant use and the risk of developing a postoperative pseudomeningocele. Emphasis and attention must be placed on meticulous closure technique. This information can aid in preoperative planning and patient selection ⁵⁾.

Case reports

2014

A postoperative [pseudomeningocele](#) was treated with [lumbar drain](#) and [fibrin glue](#). Performed for persistent right [pleural effusion](#), [CT myelogram](#) failed to show communication between the [cerebrospinal fluid](#) (CSF) and pleural space-even on 2-hour delayed images. Subsequent [In DTPA cisternogram](#) clearly demonstrated [CSF leakage](#) into the right pleural space at 2 hours, and surgical repair yielded good results. [radionuclide cisternography](#) is a highly useful method to detect CSF leak, especially when it is occult on [CT](#) yet suspected clinically ⁶⁾.

References

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