

Spinal cerebrospinal fluid (CSF) leak is an important and underdiagnosed cause of new onset headache that is treatable. Cerebrospinal fluid (CSF) bathes and supports the brain and spinal cord. When the connective tissue known as dura that holds CSF in around the spinal cord has a hole or tear, the result is a loss of CSF volume, known as **intracranial hypotension**.

Spinal CSF leak may occur as a result of **medical procedures** or **trauma** or may occur **spontaneously**.

Spontaneous spinal CSF leaks are associated with:

- spinal pathology, or
- Heritable Disorders of Connective Tissue which predispose to abnormal dura

In 2016, Schievink and colleagues outlined a classification of anatomic types of spontaneous spinal CSF leaks based on a series of 568 patients who underwent spinal imaging (1). Operative findings were reviewed for those patients that had surgery.

They found **3 anatomic types of spontaneous spinal CSF leaks**. A fourth type was added for those that remained indeterminate. In addition, the **presence or absence of extradural CSF collection** was included in the classification.

Classification of spontaneous spinal CSF leaks

Type 1	– dural tear – <i>extradural CSF collection in almost all</i>	[26.6%]
1a	– ventral CSF leaks	(96%)
1b	– posterolateral CSF leaks	(4%)
Type 2	– meningeal diverticula – <i>extradural CSF collection in 22.1%</i>	[42.3%]
2a	– simple diverticula	(90.8%)
2b	– complex meningeal diverticula / dural ectasia	(9.2%)
Type 3	– CSF-venous fistula – <i>extradural CSF collections absent</i>	[2.5%]
Type 4	– indeterminate – <i>extradural CSF collections in 51.5%</i>	[28.7%]

Presence or absence of extradural CSF collection

extradural CSF collections were present in 50.5% of the patients		
of those patients:	52.3%	Type 1
	29.4%	Type 4
	18.5%	Type 2
	zero	Type 3

This understanding of anatomic leak types has contributed to the evolution of imaging strategies tailored to the suspected leak type. Treatment approach is planned on the basis of specific leak type and location.

(1) Neurology. 2016 Aug 16; 87(7) 673679