



## Spontaneous intracranial hypotension secondary to CSF-venous fistula: a case report

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### Introduction

Spontaneous cerebrospinal fluid hypotension (CSFH) is characterized by an abnormal reduction in cerebrospinal fluid (CSF) pressure, which commonly leads to secondary orthostatic headache and incapacitating symptoms such as nausea, vomiting, pulsatile tinnitus, neck pain, and dizziness. The etiologies are challenging for neurologists, neurosurgeons, and radiologists, especially when dealing with CSFH due to a CSF-venous fistula (CVF); a recent discovery that requires a meticulous approach and detailed imaging studies, such as ultrafast dynamic CT myelography.

### Objective

To highlight the importance of early diagnosis of CSFH due to CVF using ultrafast dynamic CT myelography, in comparison to conventional CT myelography, for an accurate and effective approach.

### Case Report

A 59-year-old male patient sought specialized care at a hospital in southern Paraná in May 2022, with complaints of orthostatic headache, sudden bilateral tinnitus, continuous and worse in silence. Cranial CT and MRI revealed bilateral subdural collections and pachymeningeal enhancement, raising suspicion of spontaneous cerebrospinal fluid hypotension. A non-guided blood patch was performed as a treatment. After the procedure, there was no clinical improvement, and the patient returned to the hospital after seventeen days. These sequential events led to the performance of neuroaxis MRI and conventional CT myelography, which reinforced the diagnosis of CSFH, with a new blood patch being requested. One month later, the patient was admitted with signs of mental confusion and slight motor coordination loss due to the worsening of the subdural collection. An ultrafast dynamic CT myelography was then performed, revealing a right posterolateral T8-T9 level CSF-venous fistula. With the definitive CSF-venous fistula localization, the patient underwent subdural fluid drainage and CVF surgical correction.

### Conclusion

Ultrafast dynamic CT myelography for CVF cases has a high positive predictive value, capable of identifying the exact location of the leak. Therefore, it should be considered in CSFH cases with orthostatic headache patterns and therapeutic failures.