

White cord syndrome following anterior cervical discectomy and fusion: a case report and systematic literature review.

Background

An extremely rare complication, following anterior cervical discectomy and fusion (ACDF) or posterior cervical arthrodesis, is an acute paralysis following the procedure, named White Cord Syndrome. Very few cases are reported in the Literature and the mechanism of acute weakness is not fully understood. This acute para or tetraplegia is associated with a pathognomonic radiographic finding, hence the name, that is the presence of hyperintensity on T2-weighted MRI.

Research question

The importance of early recognition of this potential postoperative complication is essential for surgeons who perform this type of surgery. A neurological examination is crucial for an early diagnosis and a suitable prompt postoperative therapy could restore spinal cord function and, therefore, a better outcome.

Design

We performed a systematic review of pertinent Literature and reported a 67-year-old case of a patient suffering from right arm pain lasting for several months, resistant to drug therapy or conservative treatments, presented with cervical herniated intervertebral disc identified at C6–7 level on C-spine MRI.

Methods

We analyzed surgical approaches that could lead to White Cord Syndrome, comorbidities, preoperative Nurick and pharmacological or surgical treatment.

Results

In literature there were described only 17 cases of white cord syndrome, included our patient. It is a more frequent complication following posterior approach and most of the patients reported neurological sequelae.

Discussion

In the case we report no emergency surgery was performed, but a pharmacological therapy was started immediately according to the NASCIS protocol (National Acute Spinal Cord Injury Study) which led, after an intensive rehabilitation program, to a total recovery of motor and sensory functions in about 30 days. The cause of the neurological deficit, in absence of intraoperative complication, seems related to spinal cord reperfusion damage already suffering from a chronic compression. It remains a diagnosis of exclusion.