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BACKGROUND

Low-flow spinal arteriovenous fistulas (SAVFs) are the most common spinal vascular malformation. They can result in severe disability including paraparesis, pain, bladder and sexual dysfunction. Once identified, most low-flow SAVFs are amenable to treatment using either endovascular or surgical means. However, these lesions are frequently misdiagnosed, resulting in prolonged delay before treatment (over a year on average) and jeopardized functional outcomes. Recognition of risk factors and typical clinical characteristics may improve diagnosis of SAVFs.

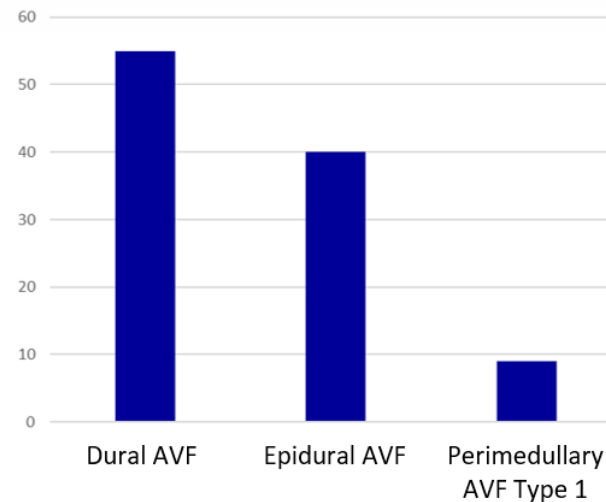
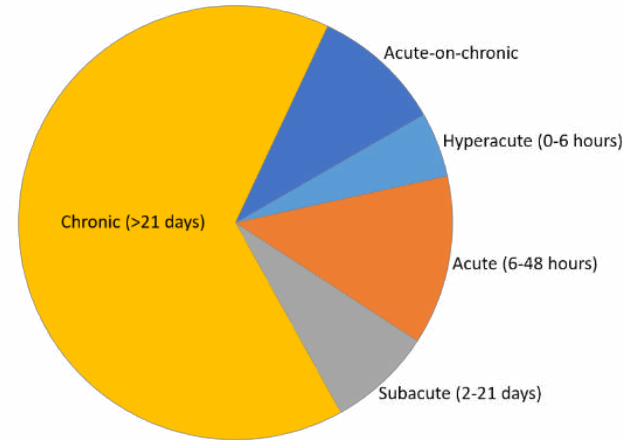
METHODS

We reviewed 100 consecutive patients with low-flow SAVFs angiographically diagnosed at our institution between 2007 and 2017.

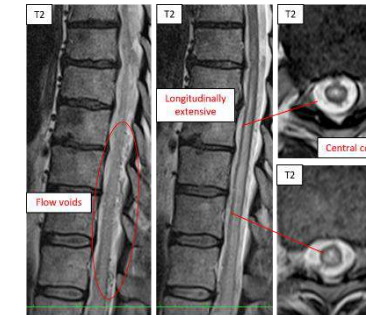
RESULTS

Variable	Total (n=100)
Male	77%
Age, median years (IQR)	61.5 (53-69)
Risk factors	
Smoker	29%
Obesity	28%
Cancer	16%
Immobility	9%
Predisposing inherited or congenital syndrome	9%
History of venous thrombosis	6%
Symptoms	
Weakness	82%
Urinary dysfunction	78%
Sensory symptoms	73%
Back pain	61%
Bowel dysfunction	60%
Impaired balance	47%
Motor fatigability/claudeication	38%
Initial diagnosis	
Inflammatory myelopathy	34%
AV fistula/malformation	28%
Lumbosacral stenosis	19%
Other neurological disorder	15%
Non-neurological disorder	4%
Delay to diagnosis, mean months (median, IQR)	13 (8, 1.5-20)

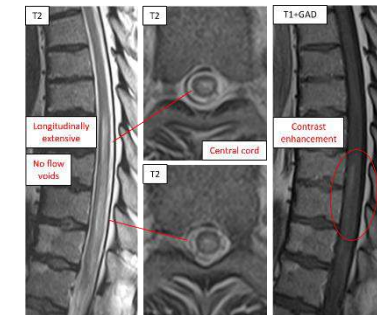
TEMPORAL PROFILE OF CLINICAL PRESENTATION



CASE 1



CASE 2



CONCLUSIONS

- Male gender, older age and risk factors for venous thrombosis are epidemiologic features that may alert physicians to consider this diagnosis
- Patients typically report multiple myelopathic symptoms, with frequent involvement of bladder and bowels
- Motor fatigability/claudeication is an important clue to this diagnosis that is not frequently seen in inflammatory myelopathies
- While the majority of patients present with chronic symptom evolution, acute and even hyperacute presentations may occur
- Diagnosis is frequently delayed in these patients
- Patients have significant disability at the time of diagnosis, with most patients requiring at least unilateral mobility aids and experiencing urinary incontinence or retention
- Further research should concentrate on identifying MRI features that may aid in the diagnosis of SAVFs

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