Sudden Quadriplegia in a Young Female

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Sir/Madam,

Spinal arteriovenous malformations (AVMs) are very rare causes of spinal space-occupying lesions.¹ They can remain silent for a long time but they can also cause catastrophic consequences once symptoms begin.¹ Improvements in interventional radiology and neurosurgery have led to better outcomes in the treatment of spinal AVMs, provided they are detected in time. We here report a catastrophic presentation of spinal AVM.

A 13-year-old female patient presented with sudden onset weakness of all four limbs. The patient was watching television on the couch when she had tingling sensation in her legs, followed by hands and this was rapidly followed by weakness of all four limbs over the next half hour. The patient was admitted to a nearby hospital where she was found to have complete flaccid quadriplegia with urinary retention. However, on the second day, she developed respiratory distress when she was transferred to our department. At presentation in our critical care unit, the patient was having tachypnea with power 0/5 in all four limbs. She was quickly scheduled for cervical spine magnetic resonance imaging (MRI) with contrast. On the second day, her dyspnea increased with single breath count of six and falling oxygen saturation. She was quickly intubated and put on mechanical ventilation. Meanwhile, the MRI reports were available, which showed (Fig. 1) AVM of the cervical spine and cervicomedullary junction with acute bleed inside the cervical spinal cord. Thus, this was the cause of her sudden quadriplegia. On taking history, it was found that the patient never complained of neck pain and had not done any vigorous neck exercise recently.

The patient was on ventilation and surgery was planned after angiography. But before anything could be done, she suffered a cardiac arrest and passed away peacefully.

On the age of the patient and location of the AVM, it was probably type I. Spinal dural AVMs are acquired diseases although their etiology is unknown.² Usually, they become symptomatic in the elderly and it is extremely rare to have symptomatic spinal AVMs below the age of 30.² Also, such AVMs are more common in the thoracolumbar region.² Spinal AVMs can sometimes be associated with Klippel–Trenaunay syndrome.

Thus, the present case is notable for two atypical features: very young age of presentation and location in the cervical region. A case similar to ours was reported in 2013 from the UK where a young patient with cervical spine AVM (C1/C2) presented with paresthesia of left arm, followed rapidly by quadriplegia and respiratory failure.³ In our patient, the AVM was present from foramen magnum up to C4. Spinal AVMs can present with sudden intra/extradural bleeding, as in our case, or the dilated vessels may cause chronic compression and myelomalacia.²

Treatment options for such AVMs include microsurgery, embolization, or both.⁴ But in some cases, the location of the AVMs may preclude surgery.³⁴ Now, newer technologies like Cyberknife are being used for such cases.⁴ We present this case to sensitize clinicians to this rare cause of quadriplegia in the young. Such cases need urgent management by a multidisciplinary team.

References