CASE REPORT

CAN ATHEROSCLEROSIS BE ONE OF THE CAUSES OF ANTERIOR SPINAL ARTERY THROMBOSIS?

Abubaker Almadani, Yasir Mehmood Malik, Javeed Ahmed Dar
Rashid Hospital, Dubai, United Arab Emirates

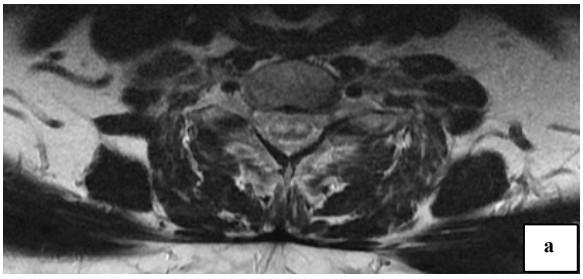
A middle aged diabetic, hypertensive, dyslipidemic, heavy alcohol consumer man came with sudden onset upper back pain and quadriparesis. Examination showed upper motor type quadriparesis with sensation of pain loss up to level of C7 and totally spared proprioception. MRI spine showed features suggestive of anterior spinal artery stroke. Can atherosclerosis be a causative factor for spinal stroke?
Keywords: spinal stroke, spinal cord ischemia, atherosclerosis, quadriparesis

INTRODUCTION

Spinal cord tissue is as prone to ischemia as much is brain tissue. Like infarction of brain, Spinal cord infarction is a well known but comparatively rare entity. Apart from low incidence of spinal stroke main demographic parameters, clinical features and prognostic factors are almost same in both entities. Most commonly affected parts are watershed areas which may be affected in states of hypotension or hypoperfusion.

CASE REPORT

A 64-year-old right handed Indian gentleman, known diabetic and hypertensive on regular therapy but poor control, who came to attend a wedding ceremony at Dubai. He woke up normal in the morning, went to washroom and on being back developed severe pain in upper dorsal spine which radiated in a band like fashion to all around his upper chest. This was suddenly followed by breathing difficulty and weakness in all limbs. There was associated anaesthesia below shoulders with urinary retention. O/E he was vitally stable with normal respiration, pulses and blood pressure being normal and equal in both arms. On neurological exam he is conscious and oriented. Cranial nerves 2–12 were unremarkable. On motor examination bulk in all limbs was normal with mild hypotonia, power in upper limbs 4/5 proximally and 3/5 distally and in lower limbs 3/5 both proximally and distally in pyramidal distribution. Deep tendon reflexes were diminished bilaterally. Abdominal reflexes were absent. Pain and temperature sensations were impaired up to C7 level, and sensations for vibration and proprioception were intact. Spinal examination was normal. Rest of systemic examination was unremarkable except palpable urinary bladder.



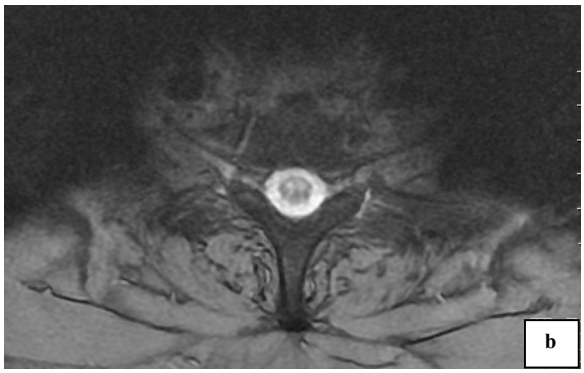


Figure-1: MRI Images
(a): T2WI and (b): T2W FLAIR Axial images showing hyperintense signal changes in distribution of anterior spinal artery. (c): T2WI sagital cut showing long hyperintense lesion in anterior part of spinal cord.

As the patient arrived in Emergency Department first impression was Aortic dissection by Emergency staff. So, CT Angiogram Chest was done which was normal. Then Neurology was involved. Based on history and examination our working diagnosis was anterior spinal artery thrombosis and

Transverse Myelitis. Baseline investigations were normal apart from high HbA1c (7.5%) and high LDL (153 mg/dl). MRI spine showed hyperintense signal changes involving anterior aspect of the cervical and upper thoracic spinal cord with sparing of the posterior 1/3rd, raising suspicion of the anterior spinal artery stroke, though transverse myelitis was still close differential. Work up including vasculitis and thrombophilia screening all were negative except only ANF was positive. We started the patient on Antiplatelets, hydration and physiotherapy with which he started improving after 3 days. After a week he was able to walk so discharged on request as he had to travel back to India.

DISSCUSSION

Spinal cord infarction is a rare but often devastating disorder caused by a wide array of pathologic states. The incidence of spinal cord infarction has not been specifically reported but it is estimated that spinal cord infarction accounts approximately 1% of all strokes.[1] Spinal stroke usually occurs in adults; usually as direct or indirect complication of atherosclerotic vascular disease, in one series the mean age was 64 years,[2] however it can occur at an

Spinal stroke almost always occurs in anterior circulation especially in watershed areas because anterior 2/3rd is supplied by a single anterior spinal artery and posterior circulation consists of two posterior spinal arteries.

Aetiology of anterior spinal artery stroke can be aortic dissection, vasculitis, paradoxical emboli from a patent foramen ovale, atlantoaxial dislocation, post-cardiac surgery embolism, cervical spondylosis, spine trauma, recreational drugs, e.g., cocaine, or infections. In adults atherosclerosis and diabetic arteriopathy is an identified cause[3] which is likely to be in our patient. We also thought about heavy alcoholism as causative agent but according to literature we could not find sufficient evidence to label it as a primary cause for spinal stroke. However, Alcoholism can be a contributing factor for atherosclerosis. Our patient had alcoholism, hypertension, diabetes and dyslipidemia as contributing factors for atherosclerosis.

The treatment has generally been supportive in addition to treat the causative factor like trauma or aortic dissection. In 2012 Müller KI *et al* thrombolised a patient with anterior spinal artery thrombosis in window period of 4.5 hours and suggested that spinal stroke should be thrombolysed.[4]

Clinical picture at presentation usually reveals prognosis, sparing of either motor or sensory function predicts better prognosis as compared to the patients who have both modalities involved.[5] Outcome after 2 months usually depends upon the neurologic deficit at nadir, especially intact proprioception is predictor of better functional outcome as in our patient who had a good outcome; and early recovery may be because of good collaterals or prompt identification and treatment institution.

CONCLUSION

Like brain infarction spinal cord ischemia can be caused by atherosclerosis secondary to diabetes, hypertension, alcoholism and dyslipidemia. In a situation of unidentified major known cause for spinal stroke, these factors should be taken into account and controlled accurately for secondary prevention.

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Address for Correspondence:

Dr. Yasir Mehmood, Specialist Registrar, Rashid hospital, Dubai.
Email: yasirmmalik@gmail.com