Acute anterior spinal artery syndrome in a 78 year old woman - a case report

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HISTORY

- A 78 year old woman presented to AMU with a history of collapse.
- PMH: Hypertension; hypothyroidism; osteoarthritis; polymyalgia rheumatica.
- HPC: The patient had been on holiday to Greece, and upon getting off the plane home she experienced her legs suddenly ‘giving way’ and collapsed to the floor. She subsequently realized that she was unable to stand or move her legs at all. She did not experience any altered sensation in any of her limbs, and she also denied any visual or speech disturbance, altered consciousness, headache, chest pain, breathlessness or palpitations.
- Prior to this event she recalled that she had been unwell for 3 days with vomiting, but did not recall eating or drinking anything unusual. Her bowel habit and urine output were normal. She last opened her bowels the day before the collapse. Other than this she had been generally well recently and reported no systemic symptoms such as weight loss, fever or skin changes. There was no history of recent traumatic injury.
- Drug Hx: Bendroflumethiazide; Lisinopril; Levothyroxine. NKDA.

EXAMINATION

- General: Lay in bed. Looked well. No pain. No pallor or jaundice.
- CVS: Normal heart sounds, pulse rate 72 bpm regular rhythm. BP: 135/72.
- Peripherally well perfused. CRT < 2 sec.
- Resp: Chest clear, good air entry bilaterally. Saturations 98% on room air.
- Neuro: Lower limbs: slightly increased tone; Power rated as 1 out of 5 bilaterally; Fine touch sensation intact; Decreased knee and ankle reflexes bilaterally; unable to assess coordination due to power deficit.
- Upper limbs: normal tone, power, coordination, sensation and reflexes.
- Cranial nerve: I – XI all normal on examination.
- Unable to perform gait assessment due to lower limb power deficit.
- PR exam: normal anal tone and peri-anal sensation.
- Tymanic Temperature: 34°C (on multiple devices)

INVESTIGATIONS

- MRI spine on admission
- MRI spine 2 weeks post presentation

DISCUSSION

Clinical Course

- Differential diagnosis of acute onset paraplegia led to initial strong suspicion of Guillain Barre syndrome despite normal CSF results (normally would expect raised CSF protein).
- Patient was admitted to ICU with 4 hours history of paraparesis in order to detect development of respiratory failure.
- Committed on IVig according to neurology advice in order to treat presumed GBS.
- After 5 days in ICU on above treatment, stepped down to ward level care. No clinical improvement or deterioration after 12 days.
- Neurophysiological study results performed 1 week after admission revealed no evidence of demyelination as cause of paraplegia.
- Reassessed due to diagnostic uncertainty. On detailed clinical examination, was found to have loss of sensation to vibration and pain below level of T6. Fine touch and proprioception (dorsal column function) was intact. Flaccid weakness, power 1/5 remained bilaterally.
- MRI scan of whole spine repeated revealing probable anterior infarction at C5-T6 level.
- Subsequently commenced on clopidogrel and referred to spinal rehabilitation for on-going treatment.

Anterior Spinal Artery Syndrome

- The anterior spinal artery supplies the anterior two thirds of the spinal column and arises from bilateral branches of the vertebral arteries, receiving numerous branches from the aorta thereafter1,2.
- Anterior spinal artery syndrome (ASAS) occurs when the anterior spinal artery is interrupted, resulting in ischaemia or infarction of the anterior 2/3 of the spinal column at the spinal level affected2.
- ASAS may result from a number of aetiologies, including: aortic aneurysm, dissection or atherosclerosis, fibrocartilaginous embolism; vasculitis; disc herniation; polycythaemia or sickle cell disease3,4.
- It typically presents with acute onset of symptoms due to infarction of the corticospinal and spinothalamic tracts, leading to complete loss of motor function and pain/temperature sensation below the level of infarct4.

Severit y Grading and Prognosis

- Non-traumatic spinal cord injuries are assessed using the ASIA classification system.
- ASIA system uses sensory level and degree of muscle power to grade patients from A to E, with A/B reflecting a poorer long-term prognosis5.

Key Points

- When assessing patients with acute onset focal neurological symptoms, it is essential to perform a full detailed neurological examination to identify the syndrome responsible.
- Timing is often key to neurological diagnoses, with vascular events usually presenting acutely.
- Spinal cord pathology can be divided into a number of syndromes, each displaying characteristic clinical signs.

ASIA IMPAIRMENT SCALE

- A = Complete: No motor or sensory function is preserved in the sacral segments S4-S5.
- B = Incomplete: Sensory but not motor function is preserved below the neurological level and includes the sacral segments S4-S5.
- C = Incomplete: Motor function is preserved below the neurological level, and more than half of key muscles below the neurological level have a muscle grade less than 3.
- D = Incomplete: Motor function is preserved below the neurological level, and at least half of key muscles below the neurological level have a muscle grade of 3 or more.
- E = Normal: motor and sensory function are normal

CONCLUSION

REFERENCES