

Pressure-Induced Non-traumatic Brown Sequard Syndrome due to Weightlifting

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Case Description

- A previously healthy 21-year-old male presented with acute onset right-sided weakness while weight-lifting following a barbell squat
- On arrival, patient demonstrated Brown-Sequard type pathology with right-sided upper and lower extremity weakness, ankle clonus, and positive Hoffman's sign, as well as diminished temperature and light touch sensation on the left side from T5 downward
- Imaging of head and cervical spine was negative for infarction and fracture but revealed right hemicord patchy enhancement from C3-C6
- Lumbar puncture and comprehensive testing were unremarkable
- He was treated with a 5-day course of methylprednisolone to cover for possible transverse myelitis due recent upper respiratory infection
- Several days later, his symptoms began to improve but still required min-mod assist for ambulation and transfers
- Patient refused acute inpatient rehabilitation despite recommendations and was ultimately discharged to home for outpatient therapy



Figure 1: Sagittal view of T1 MRI cervical spine showing right hemicord patchy enhancement from C3 through C6

Background

- The classic presentation of Brown-Sequard Syndrome (BSS) involves ipsilateral weakness and contralateral loss of pain and temperature below the level of a spinal cord hemi-section injury
- Penetrating trauma, such as gunshot wounds and stabbings, is the most common cause of BSS, though blunt trauma has also been known to produce this condition
- Herein, we discuss a 21-year-old weightlifter with pressure-induced non-traumatic Brown-Sequard Syndrome

Discussion

- In the current body of literature, there have been no previously reported cases of BSS caused by excessive pressure as seen in our patient after performing a barbell squat
- Patients with BSS typically have full recovery between 6 months to 2 years
- Slower recovery associated with patients who develop bowel or bladder dysfunction
- Our patient was noted to have continued deficits one week after admission but had good outcome with continued comprehensive outpatient therapy

Conclusions

- Although BSS is typically due to penetrating or blunt force trauma, this case demonstrates that non-impact, pressure-induced injuries may also cause this syndrome
- At one-year, the patient had full recovery and returned to his usual physical activity

References

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