The Journal of Emergency Medicine, Vol. 47, No. 5, pp. 552–556, 2014

0736-4679/$ - see front matter

ELSEVIER

http://dx.doi.org/10.1016/j.jemermed.2014.06.030

Selected Topics: Neurological Emergencies

SPONTANEOUS SPINAL SUBDURAL HEMATOMA OF INTRACRANIAL ORIGIN PRESENTING AS BACK PAIN

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☐ **Abstract—Background: Spinal subdural hematoma (SDH) is an uncommon condition mainly associated with bleeding dyscrasias, use of anticoagulants, trauma, iatrogenic procedures, and vascular malformations. Prompt diagnosis and treatment are recommended to prevent progressive neurologic compromise. Spinal SDH concomitant with intracranial SDH is an even rarer entity, with few cases reported in the English literature. Here we present a case of spontaneous spinal SDH with intracranial SDH presenting as sacral back pain in a 70-year-old man. We also describe the potential mechanism, treatment, and prognosis of concomitant spinal and intracranial SDH. Case Report: We report an unusual case of spontaneous spinal SDH concomitant with intracranial SDH and discuss the epidemiology, clinical presentation, potential etiology, treatment, and prognosis of this disease. Why Should an Emergency Physician Be Aware of This?: Awareness of the association between spinal SDH and intracranial SDH can expedite appropriate imaging of both brain and spine, which can lead to a more complete diagnosis and require changes in patient management in the emergency setting. © 2014 Elsevier Inc.**

☐ **Keywords—spinal hematoma; intracranial hemorrhage; subdural hematoma; spontaneous hemorrhage; back pain**

Institutional Review Board exemption was assumed because this study was a case report without any personal identifiers.

INTRODUCTION

Spinal hematomas are rare, but the acute progression of spinal hemorrhage can lead to devastating neurologic sequelae. Therefore, prompt identification and treatment is essential. Spinal subdural hematomas (SDHs) account for < 4.1% of all spinal hematomas and are mainly associated with bleeding dyscrasias, use of anticoagulants, trauma, iatrogenic procedures, and vascular malformations (1). Most present as acute to subacute pain at the level of the spinal hemorrhage and can have neurologic symptoms, including sensory disturbance, progressive weakness, urine and stool retention or incontinence, and paralysis. To our knowledge spinal SDH concomitant with intracranial SDH is even rarer, with cases more commonly a result of trauma and less commonly due to coagulopathy or without any identifiable cause (2–27). Here we present an unusual case of spontaneous spinal SDH concomitant with intracranial SDH followed by a discussion on the epidemiology, clinical presentation, potential etiology, treatment, and prognosis of this disease.

CASE REPORT

A 70-year-old man presented to the emergency department with a chief complaint of back pain radiating down to his toes and bilateral lower-extremity weakness for 5 days. Medical history was significant

RECEIVED: 2 October 2013; FINAL SUBMISSION RECEIVED: 16 May 2014;
ACCEPTED: 30 June 2014

for hypertension, hyperlipidemia, benign prostatic hypertrophy, metastatic non–small cell lung cancer diagnosed in 2007 with metastasis to the left adrenal gland status post chemotherapy, radiation therapy, left adrenalectomy, and left lower lobectomy in 2008, and partial colectomy in 2006. The patient was on tamsulosin 0.4 mg daily. There was no history of trauma or use of aspirin, clopidogrel, or warfarin. Review of systems was positive for urinary hesitancy and mild, chronic headaches, and negative for fevers, chills, nausea, vomiting, visual changes, numbness, or incontinence.

The patient's initial temperature was 36°C, heart rate was 74 beats/min, blood pressure was 167/82 mm Hg, respiratory rate was 19 breaths/min, and oxygen saturation was 96% on room air. The patient was alert and oriented to person, place, and time. Cardiovascular, pulmonary, and abdominal examinations were normal. On neurologic examination, pupils were 4 to 2 mm bilaterally, extraocular movements were intact, cranial nerves were intact with normal deep tendon reflexes, strength was 5 out of 5 bilaterally, and sensation was normal to light touch, temperature, and vibration. Back examination revealed exquisite tenderness to palpation at the tailbone. Rectal examination showed good strength and tone with a nontender prostate.

The patient was given morphine 4 mg i.v. for pain. White blood cell count was 8500/μL (reference range 4,000 to 10,800/μL), with a neutrophil percentage of 84.1% (reference range 43% to 75%). Platelets were 189,000/μL (reference range 145,000 to 400,000/μL). Electrolytes and hemoglobin were normal. Urinalysis showed a specific gravity of 1.014, but was otherwise unremarkable. International normalized ratio was 1.1 (reference range 0.8 to 1.2). Given the patient's cancer history, magnetic resonance imaging (MRI) of the lumbosacral spine with and without gadolinium was ordered to evaluate for metastases. Review of the MRI by neuroradiology revealed an SDH along the posterior spinal canal from L4 to S1 with resultant tapered compression of the thecal sac at these levels with moderate to severe narrowing and nerve root compression at L5 to S1 (Figure 1). Consequently, a computed tomography (CT) of the head was ordered, which showed bilateral convexity SDHs, right larger than left, without significant midline shift, as well as mild mass effect upon underlying parenchyma, lateral, and third ventricles (Figure 2). The patient was admitted, placed on levetiracetam 500 mg twice daily, and bilateral subdural drains were placed by the neurosurgical service. The spinal SDH was conservatively managed. The subdural drains were removed after repeat head CT showed decreased SDHs. Serial head CTs showed moderate resolution of the SDHs. The patient's pain decreased and he was discharged on levetiracetam 500 mg twice daily 4 days after initial admission.

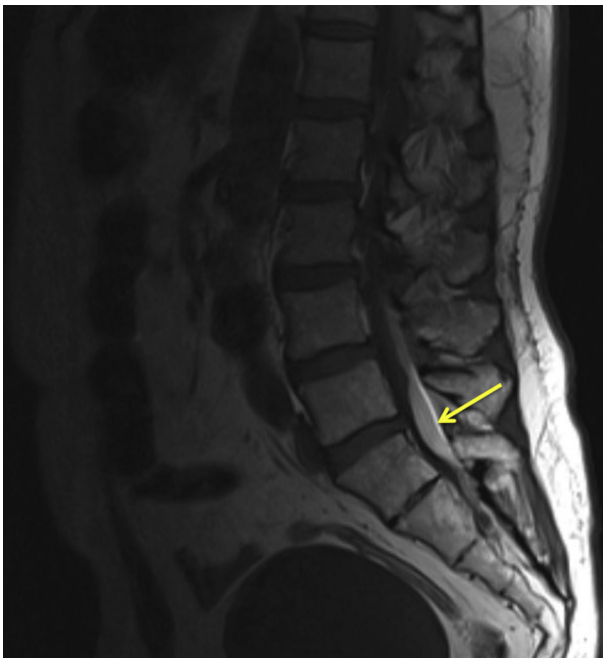

Figure 1. Sagittal T1-weighted magnetic resonance imaging of lumbar spine without contrast with arrow indicating area of high-signal intensity at L4 to S1 consistent with subdural hematoma.

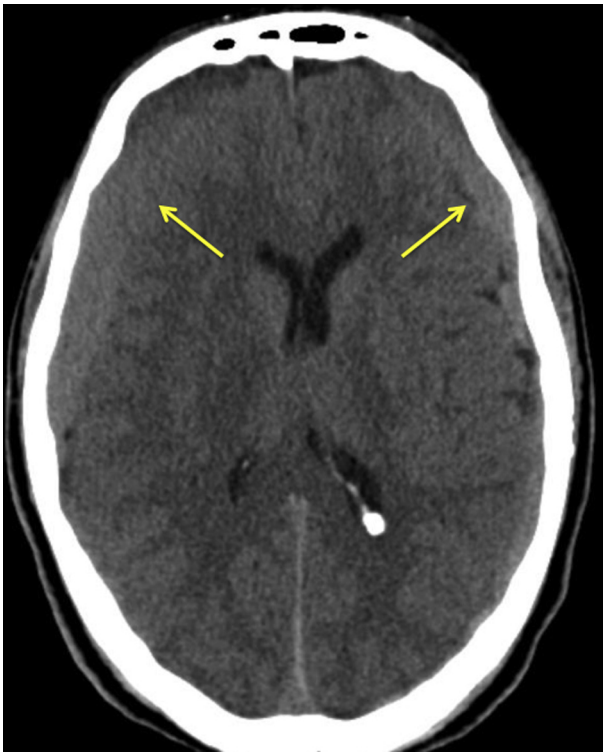

Figure 2. Axial head computed tomography without contrast performed after admission showing bilateral subdural hematomas.