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ACUTE SPONTANEOUS SUBDURAL HEMATOMA IN A MIDDLE-AGED ADULT: CASE REPORT AND REVIEW OF THE LITERATURE

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☐ **Abstract—Background: Acute spontaneous subdural hematomas (ASSDH) occur by a variety of pathological processes and are less common than trauma-related acute subdural hematomas (SDH). Both types are usually seen in the elderly, and only 22 cases of ASSDH in patients aged < 40 years have been reported in the medical literature. Objectives: We report a rare case of ASSDH in a middle-aged male with no previous history of head trauma. A literature review comparing the clinical presentations, etiologies, incidence, mortality rates, and prognostic factors of ASSDH in various age groups is discussed. Case Report: A 37-year-old man presented to the Emergency Department with headaches, myalgias, and vomiting. Noncontrast computed tomography revealed a unilateral ASSDH with 9 mm of midline shift, despite a normal neurological examination. Upon admission, the patient developed an abducens palsy suggesting increased intracranial pressure and underwent an urgent hemicraniectomy. Pathological sampling revealed large atypical cells indicative of a hematopoietic neoplasm, but various advanced imaging modalities failed to identify signs of cerebral tumor, vascular malformation, or arterial extravasation. Conclusion: Given the rarity of SDH in nonelderly patients, this case suggests a broader differential diagnosis for nontraumatic headaches to include arterial and even neoplastic origins. Our literature review confirms the paucity of reported incidences of ASSDH, yet reminds medical providers to closely monitor for developing neurological symptoms and initiate prompt medical intervention when necessary.** © 2014 Elsevier Inc.

☐ **Keywords—acute spontaneous subdural hematoma; nontraumatic; headache; idiopathic**

INTRODUCTION

Acute spontaneous subdural hematomas (ASSDHs) are caused by any disruption of the bridging intracranial vessels in the absence of cranial trauma and uncommonly present in the emergency department (ED). The etiologies are diverse and include arterial, coagulopathic, oncological, and other isolated origins (1–79). A steadily worsening headache is often clinically observed, but it can quickly turn fatal from increased intracranial pressure if the hematoma continues to expand.

Both traumatic and spontaneous subdural hematomas (SDH) are frequently seen in the elderly, with few reported cases of ASSDH in younger age groups; in support, our review of the medical literature yielded just 22 cases of ASSDHs in patients < 40 years of age (Table 1). We report an ASSDH in a middle-aged man with subtle yet progressive clinical signs of worsening intracranial pressure in the absence of cranial trauma. We also report a review of the medical literature regarding etiologies, incidences, mortality rates, and prognostic factors of ASSDH in various age groups.

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Table 1. Distribution of Age, Gender, and Etiology in Reported Cases of ASSDH

	Overall	Age >40 Years	Age <40 Years	Teenagers
Total number of cases	193	171	22	4
Specified gender	121/193	98/171	22/22	4/4 (100%)
Gender ratio (M:F)	76:45	65:33	1:1	3:1
Specified causes:	148/193	126/171	22/22	4/4 (100%)
Arterial (3–5,9,11,14–16,22,29–39,50–70)	91 (61.5%)	85 (67.5%)	6 (27.3%)	–
Idiopathic (6,7,10,22,23)	16 (10.8%)	11 (8.7%)	5 (22.7%)	3 (75%)
Coagulopathy (17–19,22,78)	15 (10.1%)	11 (8.7%)	4 (18.2%)	–
Oncological (21,40–42,71–74)	8 (5.4%)	7 (5.6%)	1 (4.5%)	–
SIH (11–13,27,28)	8 (5.4%)	4 (3.2%)	4 (18.2%)	–
Cocaine (20,45,79)	3 (2.0%)	2 (1.6%)	1 (4.5%)	–
AV malformation (8,37)	2 (1.4%)	1 (0.08%)	1 (4.5%)	1 (25%)
Arachnoid cyst (43)	1 (0.07%)	1 (0.08%)	–	–
Moyamoya disease (46)	1 (0.07%)	1 (0.07%)		
Osteogenesis imperfecta (44)	1 (0.07%)	1 (0.08%)	–	–
Meningioma (77)	1 (0.07%)	1 (0.08%)	–	–
Heavy lifting (75)	1 (0.07%)	1 (0.08%)	–	–

ASSDH = acute spontaneous subdural hematoma; SIH = spontaneous intracranial hypotension; AV = arteriovenous.

CASE REPORT

A 37-year-old man presented to the ED by ambulance after experiencing a gradually worsening headache culminating in episodic vomiting with scant hematemesis earlier that morning. The patient, an active duty United States Army soldier, denied a history of chronic headaches, medical conditions, blood disorders, or recent head trauma. He had no history of combat deployment and denied any military-related injuries. The patient was a one-pack-per-week tobacco user but denied alcohol or illicit drug use. He had taken acetaminophen for these headaches over the past 3 days, and earlier that day he experienced a "more severe headache" that was exacerbated while exercising. Our patient presented by ambulance with an "improving" headache and was normotensive and in no apparent distress. A targeted neurological examination failed to show any sign of cranial nerve dysfunction, focal weakness, ataxia, or papilledema on fundoscopy. A computed tomography (CT) scan of the head was obtained after it was learned that his younger brother had died of an intracranial hemorrhage at around age 20 years. Imaging showed a unilateral acute SDH with 9 mm of midline shift (Figure 1). Preoperative cerebral magnetic resonance angiography (MRA) noted "crowding" of the vascular structures near the sylvian fissure but no evidence of extracranial trauma, neoplasm, aneurysm, vascular extravasation, arteriovenous fistula, progressive herniation, or worsening of the hematoma size. Nonetheless, within hours of admission our patient developed a left abducens palsy, culminating in an urgent hemicraniectomy. The neurosurgeon noted fresh

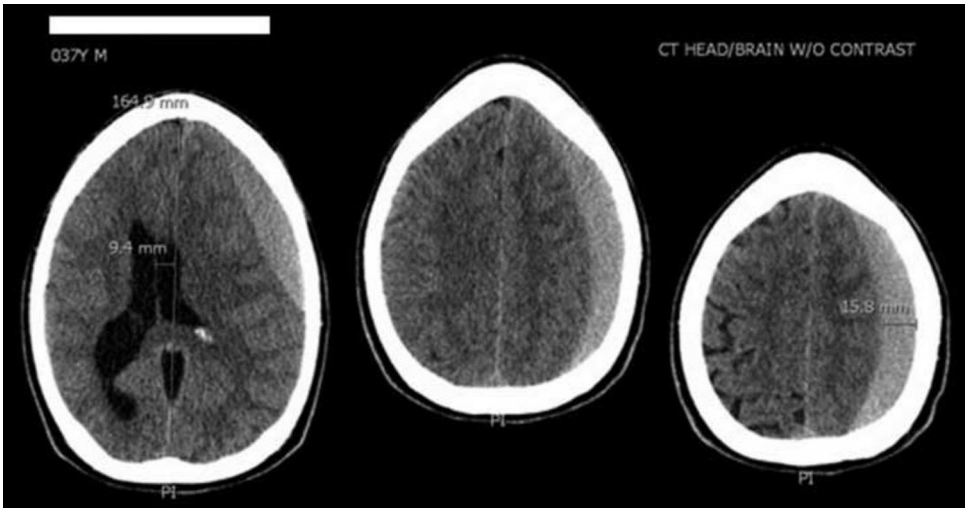

Figure 1. Noncontrast cranial computed tomography image of an acute spontaneous subdural hematoma. There is hyper-dense subdural fluid on the left side with 9 mm of midline shift and no evidence of cranial trauma.