



# Sleeping a Lot After a Fall

Thu Nguyen, D.O., Jane Daugherty-Luck, D.O.

Trinity Health System Emergency Medicine Residency Program, Steubenville, OH



## Learning Objectives

- Describe case of falx subdural hematoma.
- Discuss the pathophysiology of falx subdural hematoma.
- Review emergent management.

## Introduction

- Acute subdural hematoma has been reported to occur in 5 to 25% of patients with severe head injuries. The annual incidence has been reported to be 1 to 5.3 cases per 100,000 population. The condition is a neurologic emergency that physicians should not miss. Subdural hematoma along the falx are infrequently reported. The first case was documented in 1940 and 100 cases were reported till 1997.<sup>2</sup> Thereafter, less than 70 cases have been reported in the literature. While falx subdural hematoma is uncommon, it is a distinct lesion.<sup>3</sup> We present a case with its unique characteristics.

## Case Report

- Patient is an 89-year-old female who fell in the morning. She was dragging a box down some steps when she missed a step and fell backwards, landing on a ceramic floor. She denied striking her head or having loss of consciousness. She complained of neck and back tightness. She did not come to the hospital initially because family was visiting. She took a nap for an extended period. She woke up still having pain to neck and entire back as well as some pain in chest and abdomen. She denied nausea and vomiting. She had taken aspirin for pain relief but denied taking blood thinner.

### Focused Physical Exam

- Patient is awake, alert and oriented times three, cooperative, calm and in non-acute distress. Neurological examination revealed no deficits and intact cranial nerves I through XII. Heart is regular rate and rhythm she does have a murmur. Lungs are clear to auscultation bilaterally. Abdomen is soft and she has mild diffuse tenderness to palpitation but no guarding, rigidity, or rebound is noted. She has tenderness along the entire C-spine, T-spine, and LS spine. No bruising or abrasions are noted to her back. She moves all extremities well.
- EKG demonstrated a rate of 75 bpm-. Imaging studies revealed compression fractures of T3 and T8 of undetermined age.
- CT head scan showed subdural hematoma of the falx.

## Discussion

- Patient was evaluated by the emergency department (ED) resident and attending. She had tenderness along the cervical, thoracic lumbar spine. She was evaluated by a neurosurgeon who deemed her not a candidate for surgery. She was cared for by the internal medicine team and subsequently referred to inpatient rehabilitation for functional decline, gait dysfunction, self-care deficits and pain management.

The most likely pathophysiology of traumatic falx subdural hematoma is linked to traumatic venous tearing frequently involving the parasagittal bridging veins. The mechanism principally responsible for laceration of the bridging veins is the linear acceleration provoked by frontal or occipital impact. Posttraumatic subdural hematoma is commonly caused by inertia instead of fracture or cerebral contusion resulting from direct impact.<sup>3,4</sup> The theory is consistent with the lack of fracture in most cases in the literature.<sup>4,5</sup> Our patient had neither contusion nor fracture.

## Conclusion

- Falx subdural hematoma is a serious condition requiring early identification and evaluation in the ED. The diagnosis is made by a history and imaging studies including attaining a full history. Obtain complete neurological examination and imaging studies. Keep patient's head elevated at 30 degree. Maintain close observation with frequent neuro-checks.<sup>4,5,6</sup> Consult neurosurgeon for determination of surgical intervention. Treat patient appropriately based on consultation. Recognizing falx subdural hematoma emergencies is an essential skill for the emergency medicine physician.

## Imaging Study



CT head scan showing subdural hematoma of the falx.

## References

1. Meagher, R.J., et al. (26 July 2018). Subdural hematoma. *Medscape*. Retrieved from <https://emedicine.medscape.com/article/1137207-overview#a6>
2. Kawoosa, N.N., Bhat, A.R., & Rashid, B. (10 Sep 2010). Interhemispheric acute subdural hematomas. *Iranian Red Crescent Medical Journal*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3371964/>
3. Ahn, J., Lee, K, et al., (13 Oct 2017). Clinical features of interhemispheric subdural hematomas. *Korean Journal of Neurotrauma*. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5702743/>
4. Koerbel A, Ernemann U, Freudenstein D. Acute subdural haematoma without subarachnoid haemorrhage caused by rupture of an internal carotid artery bifurcation aneurysm: case report and review of literature. *Br J Radiol* 2005; 78:646.
5. Vega RA, Valadka AB. Natural History of Acute Subdural Hematoma. *Neurosurg Clin N Am* 2017; 28:247.
6. Koç RK, Akdemir H, Oktem IS, et al. Acute subdural hematoma: outcome and outcome prediction. *Neurosurg Rev* 1997; 20:239.