CLINICAL VIGNETTE

Zzzzz….Doctor, Why is Your Patient So Sleepy?

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Case Report

An 86-year-old man with history of vascular dementia, stroke, prior falls, and hypertension was hospitalized for weakness after a mechanical fall. His family brought him to the ER where he was found to have a non-displaced left radial fracture. His arm was placed in a splint, and he was discharged home. On the following day, his family noted dramatic weakness; he returned to the hospital and was admitted.

On exam, his vitals including orthostatics were unremarkable. He was mostly non-verbal, which was his baseline. His left arm was in the splint and appeared stable with no hematoma. The rest of his exam was unremarkable. Labs, including complete blood count, complete metabolic panel, and creatine kinase were normal. A urine analysis, EKG, and chest x-ray were also normal, and a noncontrast head CT showed no acute findings.

The patient had increasing episodes of lethargy and weakness in the hospital, which were attributed to physical deconditioning. He was discharged to a skilled nursing facility (SNF) for further rehabilitation where he was noted to have further prolonged hours of somnolence. On initial encounter at the SNF, vitals were unchanged, but he was responsive only after 30 to 40 seconds of sternal rub at which point the patient slowly moved his hand towards the stimuli. These somnolent episodes lasted for hours, and he was noted to be asleep for most of the day, interrupted by a few hours of more alert states where he participated in meals and physical therapy. Repeat labs were unchanged.

The patient eventually improved back to his cognitive baseline after restoring his sleep-wake cycle with behavioral modifications and optimizing his environment and rehabilitation goals. He eventually returned home to his prior living arrangement with full-time caregivers.

Discussion

When tasked to determine a patient's diagnosis, we almost immediately create a mental picture of our patients, adding or subtracting pertinent pieces of their history while simultaneously comparing this picture to a list of differential diagnoses. For clinicians, this process occurs nearly instantly and naturally and helps guide our evaluation.[1] In this case, we illustrate a more extreme version of hypoactive delirium presenting as periods resembling loss of consciousness and somnolence. We will elaborate on our patient's diagnosis of hypoactive delirium, followed by the clinical reasoning that allowed us to come to this conclusion.

Hypoactive Delirium

The etiology of delirium is multifactorial and is described as an acute confusional state characterized by inattention and fluctuating disturbance of consciousness that is not due to dementia.

In the elderly, delirium can lead to a cascade of events that perpetuate functional and cognitive decline, loss of independence, and increased likelihood for institutionalization and mortality.[2]

The presentation of delirium varies along a broad spectrum on the basis of psychomotor manifestations.[3-4] It is typically classified under three categories – hypoactive, hyperactive, and mixed. Hypoactive delirium is a type of delirium more commonly seen in the elderly and often unrecognized.[3-6] It is characterized by marked lethargy, decreased level of motor activity, unawareness, sparse or slow speech, staring, or apathy. In contrast, hyperactive delirium can be more readily apparent to medical staff as it typically manifests with psychomotor agitation and hypervigilance. Patients with mixed delirium may demonstrate both or switch between variants. Risk factors for hypoactive delirium include elderly age, hospitalizations, and residence in long-term care facilities. It is often mistaken as depression or extreme fatigue.[7] Hypoactive delirium also has a worse prognosis, and if left untreated, prolonged delirium is associated with poorer outcomes including functional decline, dementia, and death.[2]

The treatment of hypoactive delirium is restoring circadian rhythm, including behavioral modification to engage patients during the day with sunlight, group activities, and optimizing sleeping environments at night.[3]

Problem Representation in Clinical Reasoning

Weakness and lethargy can be a diagnostic dilemma for the clinician since symptoms can be vague and non-specific. It can be even more challenging in the geriatric patient as cognitive

impairments often interfere with obtaining a reliable history. Clinicians naturally create mental images of patients and compare that to a list of differential diagnoses to come to the final answer. In clinical teaching, we describe creating that mental image as a Problem Representation (PR), a succinct summary statement of a patient's history.[8] We then compare that PR to disease patterns, or Illness Scripts, that we have either seen, read, or heard about. In clinical teaching, we try to be very explicit in this process as it teaches us how doctors think, and the more we practice the better we develop our clinical reasoning skills.[1,9]

For example, one Problem Representation (PR) for our patient might be: Recently hospitalized elder presenting with acute intermittent lethargy and decreased motor activity. Notice how our PR includes key portions of the patient history, including being recently hospitalized, episodic lethargy, and hypoactive activity. Notice, also, what is excluded in the PR, including the patient's specific age, past medical history, and more. What is excluded in the PR can be equally important to what we include. Indeed, our patient's specific age does not aid us in developing our PR, and in fact, it simply adds more variables to think about. Instead, categorizing our patient as simply being "elder" provides a succinct easily digestible summary of a key epidemiologic risk factor. All together, the purpose of the PR is to focus our attention on the disease patterns, or Illness Scripts, that are the most likely.[1,8-9] As one can see, crafting a PR takes practice and is vital to our clinical reasoning.

Sometimes the ability to create a clear Problem Representation can be quite challenging either due to inability to gather enough data or general vagueness of the patient's symptoms. In these cases, the PR does not always easily match Illness Scripts. As a result, we rely on clinical reasoning that is more analytical.[9] Our differential diagnosis is based on a systems approach in order to broaden our clinical thought process and minimize risk of missing the diagnosis. In our patient, one analytic approach to weakness and lethargy might be to consider etiologies due to metabolic, cardiovascular, pulmonary, hematologic, and so on.

However, while this analytic approach is quite useful in coming to the final diagnosis, it can lead to extra studies and tests as each hypothesis is being considered, all of which is costly in time and money. Alternatively, creating a problem representation can be extremely helpful in focusing our lens on a diagnostic problem. In our problem representation, a "recently hospitalized elder presents with acute intermittent lethargy and decreased motor activity." This matched most closely with a diagnosis of hypoactive delirium. Since he remained clinically stable, we deferred further imaging or extensive laboratory tests. Instead, our hypoactive delirium fit best with our problem representation, and the patient improved with behavioral modification.

Conclusion

We describe a case of an elderly patient with vague symptoms of lethargy and intermittent somnolence. While these clinical features often prompt an extensive evaluation, creating a Problem Representation allowed us to narrow down the most likely etiologies and diagnoses. We were able to conclude hypoactive delirium as the primary contributor and cause of his presentation.

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