

# FACULTY GUIDE

## Mental Status Change

### Discussion Questions and Faculty Answers

#### CASE #1:

- 1. What is your differential diagnosis for Mr. Ryan and why? What parts of the history, physical, and mental status examinations aid you in your differential diagnosis?**

The differential diagnosis for an eighty one year old man with increasing forgetfulness includes benign senescent forgetfulness, dementia, delirium, and depression. The history is most suggestive of a dementing illness given the slow time course, the difficulties in multiple tasks, the lack of evidence for depression and the results of the MMSE. Delirium is unlikely given the slow onset and course over two year as well as Mr. Ryan's ability to maintain attention on the MMSE. Benign senescent forgetfulness is a mildly controversial entity that describes older individuals with isolated problems in memory. It is not progressive and should not interfere with functional status. Mr. Ryan denies the screening questions associated with depression and does not appear sad.

On the basis of the history and physical examination, it seems likely that Mr. Ryan is suffering from a senile dementia of the Alzheimer's type. This is a diagnosis of exclusion and it will be important with the laboratory testing to rule out any surprises like hypothyroidism, but given the absence of a history of hypertension, cardiovascular disease, previous neurologic events, and the non-focal neuro exam it makes vascular dementia less likely.

- 2. What tests would you order for Mr. Ryan's work-up?**

Appropriate laboratory studies include a CBC with differential, a chemistry panel (glucose, lytes, BUN, Cre, LFT's, Calcium), a TSH, and consider obtaining a B12, folate and RPR. Given the decreased vibratory sense, it is reasonable to obtain the B12 as well as the RPR. A hard question to answer is whether or not to obtain some type of neuroimaging study like a CT scan or MRI. Given that Mr. Ryan's symptoms have been going on for two years, the chances of a reversible cause being found are less likely. I would obtain a CT scan without contrast, however, to rule out the possibility of a subdural hematoma, a frontal meningioma, or any other surprises.

Another finding on the physical exam is a hard prostate nodule. This is likely prostate cancer. It is unclear whether working this up and treating, either with surgery or radiation, would provide benefit for Mr. Ryan.

Students who are interested in the costs and benefits of a workup of cognitive decline can be referred to Siu AL. Screening for dementia and investigating its causes. *Annals of Internal Medicine* 1991;122-132.

**3. What would you discuss with Mr. Ryan and his family about diagnosis and planning for the future?**

I would ask Mr. Ryan if he had any questions about his condition or what the tests have shown. If he does not, I would tell him that I have concerns about his memory and that he may need further assistance in the future. I would also discuss with his family the likely diagnosis of Alzheimer's disease, suggest that they review financial planning such as will and durable power of attorney with Mr. Ryan, discuss the need for advance directives for health care and durable power of attorney for health care, and urge them to consider some planning for the future as Mr. Ryan's dementia progresses. This would include the need for further help in the home, the possibility of adult day care, and, perhaps, nursing home placement. In addition, the family should consider safety issues such as getting Mr. Ryan a name bracelet in case he wanders and being ready to disable the stove if he becomes forgetful and leaves it on. If Mr. Ryan is driving a car, this needs to end. The family should be notified to contact the Secretary of State and have his license revoked. The issue of physician notification of the State is difficult: I would suggest that the risk management office be called for advice in individual situations.

The family may benefit from a referral to a social worker to discuss some of the issues in planning as well as considering personal support in dealing with Mr. Ryan.

Should Mr. Ryan be told directly that he likely has Alzheimer's disease? If he asks, then yes, provided that he can receive appropriate support with such a devastating diagnosis. It may be paternalistic, but I do not think it obligatory to volunteer the diagnosis to an individual who is unconcerned or unlikely to remember, especially as we currently lack clearly effective therapy. Others may disagree with this approach, feeling compelled to inform fully all patients of their diagnosis. It would be worth asking the students how they feel about this issue and how they would justify their position.

**CASE #2:**

**1. Create a problem list for Mrs. Walker's acute presentation and a differential diagnosis of her mental status changes.**

Problem list:

- Acute mental status changes, probable delirium
- UGI bleeding
- Dehydration with hypernatremia
- Elevated BUN and Cre, ?pre-renal, ? Increased BUN secondary to UGI bleeding
- Urinary tract infection
- Likely degenerative joint disease.

One could create a long list of diagnostic possibilities but what seems most likely is that Mrs. Walker is presenting with a delirium in the setting of an UGI bleed. The UGI bleed may be caused by gastritis related to the use of Ibuprofen. Although the delirium may have a number of

causes, one would be suspicious of the use of cimetidine.

**2. Write her admitting orders and plans for diagnosis and management over the next day or two.**

Admit Medicine

Diagnosis: UGI bleeding, acute mental status changes

Condition fair

Vital signs q shift

Allergies: NKA

IV: the students should be questioned about the treatment of hypernatremia. If Mrs. Walker shows evidence of volume depletion it would be unreasonable to treat her initially with normal saline than switching to 1/2 normal once her volume status has been corrected.

It would also be reasonable to transfuse Mrs. Walker with a Hct of 25.

The remainder of the orders and management should focus on treating a likely gastritis, arranging for endoscopy or an UGI series, and managing her delirium.

With regard to treating the gastritis, one would want to avoid using an H2-blocker because of the issue of confusion. One could use antacids or sucralfate in this setting, unless bleeding persists or worsens and more aggressive therapy is indicated.

*One of the important aspect of the orders is to focus on minimizing interruptions, encouraging a normal sleep-wake cycle, and avoiding any medications that can make her confusion worse. There should not be PRN orders for benzodiazepines or Haldol.*

**3. What other laboratory tests or studies are indicated? Does she need an emergent CT scan?**

Mrs. Walker should have a full chemistry panel with LFT's and calcium as well as a TSH. I would obtain an emergent CT scan as she has acute changes and has bruises. My major concern would be a subdural hematoma. The scan should be obtained without contrast given the elevated BUN and creatinine.

**4. What plan would you make to manage her confusion? Should she be restrained? Should she receive any sedating medication?**

Confusion in an elderly person is first managed by providing an environment that does not exacerbate confusion. Mrs. Walker should be placed in a quiet room, her family allowed to stay with her (if they are calming and do not make things worse!), and every effort made to allow her to sleep at night but be awake during the day. Restraints are quite frightening and often make people more confused. Posey vests can be quite dangerous. Restraints should only be used as a last resort when there is concern that the person is likely to be hurt without the restraint or there is no other way to maintain intravenous access. In acute confusion, one can use a very low dose of a medication like haloperidol, e.g. 0.5 mg, to take the edge off symptoms. This should be used

only when other measures have not worked and the medication is needed for the person's safety and comfort. Haldol is not a benign medication. It should not be used initially in large doses.

- 5. Shortly after admission, Mrs. Walker's three sons, a state policeman, a Marine Corps major, and a lawyer, come to the hospital. They are all upset about their mother and want to know what is wrong with her, why she is "acting crazy", will she get better, and what you will do to make her better. How will you respond?**

The key information for the family is that Mrs. Walker is suffering from a delirium, that it is most likely due to a medication she was taking and her acute illness, and that, over time, it is most likely that she will recover fully. Although it is extremely frightening for a family to see a mother suddenly confused, they should be reassured and encouraged to help in calming their family member.

- 6. How does the information about Mrs. Walker's pre-morbid functional status influence your diagnosis?**

Mrs. Walker's pre-morbid functional independence is the best prognostic information one has. There is nothing to indicate a pre-existing dementia or other problem. Once the effects of the cimetidine wears off and the acute medical problems are treated, Mrs. Walker should get better. It can take a while, however, for a drug induced delirium to clear and there may be a need for a brief stay in a nursing home for rehabilitation and skilled care.

### **CASE #3:**

- 1. What is your preliminary diagnosis and what should be done with Mr. Howard?**

Mr. Howard has had an acute in mental status with decreased consciousness. Given the findings on neurological examination, the sleepiness, and the history of coumadin use, one must be very concerned about an intracranial bleed, especially the possibility of a sub-dural hematoma.

- 2. Screening laboratory tests return within normal limits. What further examinations or testing should be performed?**

Mr. Howard needs a CT scan. An MRI would not be as good as the CT scan is the test of choice to detect intracranial bleeding.

- 3. You decide to order an emergency CT scan. The CT scan cannot be obtained after 5 p.m. without the permission of the staff radiologist. Should you call the radiologist to obtain the scan that night? How would you justify this request?**

The emergent CT scan can be justified by the acute changes and the plan to obtain neurosurgical consultation and drainage if