Med W H&P

CC: new onset of fever, HTN, rigidity and altered mental status

HPI: Mr. [redacted] is an 82 yo gentleman with a history of Alzheimer's dementia, pseudogout, hearing loss and possible PMR who was admitted to Med A and then Psych on 11/16 for aggressive behavior and altered mental status displayed at Carolina Meadows. His psychiatrists have been adjusting his medications since the 16th in an attempt to dampen his aggressive behavior without completely sedating him. Per the CNA sitters from Carolina Meadows, Mr. [redacted] developed a wet but non-productive cough one day prior to admission to Med W. On the day of admission, he refused to eat lunch and developed full body rigors around 13:00. The rigors persisted for over 30 minutes as his temperature began to rise, spiking to a max of 40.4 degrees Celsius. Additionally, he developed a hand tremor, cog-wheeling on exam, increasing HTN and his responsiveness decreased to the point that he no long withdrew to pain. ROS was unable to be assessed given Mr. [redacted]'s current unresponsiveness.

A general med consult was called and they began to investigate NMS vs sepsis. Blood cultures x2 and initial labs (CBC, chemistries, cardiac enzymes) were drawn, serial vitals performed and Dantrolene was ordered STAT. Dantrolene was hung at 17:35 with his vitals recorded as: T 40.3, HR 129, RR 19, BP 163/85. 30 minutes later his vitals had dropped to: T 38.2, HR 115, RR 17, BP 117/62. His "rattley" cough persisted and clear sputum was produced with suction. His breathing improved with suction and elevation of the head of the bed. He was then admitted to Med W and transferred to the MPCU. Initial diagnostics included: UA, urine cultures, cycle enzymes, CBC, LFT, LDH, Ca and K levels, head CT and EKGs were ordered.

PMH: (per pt records)
1. Alzheimer's Dementia – dx 2005, followed by Dr. Mitchell Heflin, DUMC Division of Geriatrics
2. PMR – tentative dx in 9/2006, started on 60mg Prednisone with a slow taper, currently down to 10mg of Prednisone q day
3. Pseudogout
4. Chronic right wrist and shoulder arthritis – negative work-up
5. Hearing loss

No prior surgeries

Meds:

Oxycodone 2.5 Q6H PRN	Lorazepam 0.5 TID PRN
Miralax packet 17 G QD	Lactulose powder 20 G QD
Trazodone 50mg QHS	Temazepam 30mg QHS
Chlorpromazine 50mg QHS	Prednisone 10mg QD
ASA 81 QD	Ferrous gluconate 325 QD

Zyprexa 5 mg TID prn

Allergies: (per UNC records)

Azithromycin, Erythromycin, Lisinopril (reactions unknown)

FH:
No history of mental illness or hospitalizations, per pt records

SH: (per CNA sitters from Carolina Meadows and pt records)
Lived independently with his wife in Carolina Meadows community until August when his Alzheimer's progressed to the point that he needed more care than he wife could give. He moved into the Greens-Memory Care unit but was then transferred to the health care center within Carolina Meadows. He was a chemical engineer at [redacted] before moving to NC. No EtOH/tobacco/drugs, per his wife.

PE: T 38.2, HR 115, RR 17, BP 117/62
Gen: pt unresponsive, lying in bed, having some difficulty breathing
HEENT: eyes are closed unless deliberately opened by the examiner, PERRL, no scleral icterus. Dry mucus membranes, unable to assess oropharynx 2/2 pt's inability to hold his mouth open.
CV: tachycardia, RRR, II/VI early systolic murmur heard best at apex, no rubs or gallops appreciated.
Pul: upper airway sounds heard diffusely across all lung fields, persistent rattling but non-productive cough exhibited throughout exam
Abdm: bowel sounds present, abdomen soft, non-distended. Unable to assess tenderness given pt's altered MS.
GU: pt in diapers, producing clear yellow urine.
Extr: no edema, tremor present in both UE and LE.
MSK: cogwheeling rigidity in bilateral UE, less rigid 30 min after Dantrolene was hung
Neuro: pt is unresponsive, does not withdraw from pain (sternal rub or nail pressure)
Skin: flushed, hot to the touch, diaphoretic

Assessment:
82 yo male with Alzheimer's dementia, possible seizure disorder and potential PMR admitted from psychiatry for new onset of cough, fever with rigors, and HTN.

DDx is currently NMS vs infection, namely aspiration pneumonia. Mr. [redacted]'s condition fits the typical clinical picture or NMS: recent mental status change (he was hospitalized on 11-16 for aggressive behavior and trying to defecate in the day room at Carolina Meadows), muscular rigidity (cogwheeling noted on exam), hyperthermia (his fever peaked at 40.4 just before Dantrolene was hung), and autonomic instability (tachycardia up to 131, HTN up to153/81, RR as high as 24, and one episode of A fib). He was also being treated with olanzapine (Zypreza) and Chlorpromazine for his Alzheimer's, both of which are associated with NMS. However, his initial lab values conflict with those expected in someone with NMS. His CK levels remain normal rather than the expected increase into the 1000's. He does have leukocytosis (WBC 11.6 with ANC 10.7), but that could easily represent infection. It is also common to have elevated LD, Alk Phos and LFT's in NMS, but his remain normal. His only laboratory abnormalities aside from the leukocytosis are a BUN of 37 and a GGT level of 263.

Given his baseline mental state and potential seizure disorder, he is at an increased risk for an aspiration pneumonia. This diagnosis would cause the leukocytosis, fever, 1 day history of rattling cough and would explain the yellowish sputum that was suctioned from his upper airway. Urine and blood cultures x 2 have been drawn to assess for infection. An LP may be considered if nothing grows in his cultures.

There is also a possibility that Mr. [redacted] actually has Dementia with Lewy Bodies (DLB) rather than Alzheimer's. After reading through his psych notes, it seems as though he has had a rapid cognitive decline over the past year, during which time he has developed some parkinsonian symptoms (specifically a wide-based, shuffling gait). Additionally, his CNA sitters from Carolina Meadows report that he has "good days and bad days" with regard to his cognition. According to UpToDate, Dementia with Lewy bodies is mainly a clinical diagnosis confirmed on autopsy. A progressive cognitive decline is required for diagnosis, and 2 out of 3 of the following make the diagnosis very probable: fluctuating cognition, spontaneous features of parkinsonism which develop shortly after the onset of dementia, and recurrent detailed visual hallucinations. Per psychiatry's notes and the CNA reports, Mr. [redacted] fits these criteria. DLB is also more associated with aggressive behavior (ie head-butting caregivers) than Alzheimer's. This is especially important because DLB is known to cause 1) a severe sensitivity to neuroleptic medications which can mimic the clinical appearance of NMS, and 2) severe autonomic dysfunction.

An EKG was performed while on the psych ward when his HR and HTN increased acutely showed significant Q waves in lead III. In his current mental state, Mr. [redacted] would not have been able to report any symptoms of an MI or could have had a silent MI. Cardiac enzymes were ordered, though we must remember that intense muscular contractions like those seen in Mr. [redacted]'s rigors and tremors can lyse muscle fibers and also spill CK, CK-MB and even small amounts of Troponin T into the blood stream

Plan:
1) FEVER / COUGH / TREMOR / RIGIDITY: NMS vs infection
- Empiric Dantrolene will be continued until a cause other than NMS is identified
- neuroleptic meds have been held, and agitation will be treated with benzodiazepines instead.
- Zosyn and Vancomycin were started to cover aspiration pneumonia
- Initial UA performed while on psych ward was negative
- fevers will be treated with Tylenol suppositories, cool blankets and ice packs
- continue to follow labs: LD, LFT's, CBC, CK, and chemistries
- await results of urine and blood cultures. Consider sending sputum cultures.
- CXR will be ordered

2) ALZHEIMER'S DEMENTIA: concern for neuroleptic-induced NMS
- as above, all neuroleptic medications have been held and benzodiazepines written for tx of agitation
- will consult psych for rec's about his dementia medications

3) POTENTIAL ACUTE MI:
- continue to follow Troponin T levels via cycled cardiac enzymes. If they are not elevated, an acute MI is unlikely and the significant Q waves in lead III could represent an old infarct.
- continue cardiac monitoring in the MPCU for arrhythmias. Episode of Afib could have been secondary to the NMS or DLB's autonomic dysfunction or could be secondary to an acute MI.

4) POTENTIAL SEIZURE DISORDER:
- only mentioned once in old reports, however divalproex will be continued to prevent potential seizure.

5) POTENTIAL PMR: diagnosis considered in September for joint pain, Prednisone taper began on 9-1-06 initial 60 mg dose now down to 10mg.
- given his potential infection, will consider holding Prednisone dosage.

6) Dispo: DNR, DNI