

Supplementary Material

Is There a Characteristic Autonomic Response During Outbursts of Combative Behavior in Dementia Patients?

Case 1

PMH:

Vascular dementia, S/P stroke

Diabetes mellitus

Hypertension

Hyperlipidemia

Coronary artery disease S/P coronary artery bypass graft

Asthma

Gout

Glaucoma

Gastroesophageal reflux disease

Possible post-traumatic stress disorder

Possible depression

IMAGING:

MRI head

1. No acute intracranial abnormality. No acute infarct, acute hemorrhage, or intracranial mass.
2. Severe extensive confluent and predominantly periventricular T2/FLAIR hyperintense white matter signal abnormality. This is nonspecific, though commonly associated with chronic microangiopathic change.
3. Diffuse prominence of the lateral ventricles. This is felt most likely to reflect a central pattern of parenchymal volume loss, especially given the extensive white matter changes as above. However, given relative crowding of sulci at the vertex and prominence of the sylvian fissures, the possibility of normal pressure hydrocephalus could also be considered in the appropriate clinical setting. Correlation with outside institution imaging, if available would be useful to assess for interval change.
4. Multiple punctate foci of susceptibility effect throughout the brain parenchyma as above. This is also nonspecific and may relate to chronic hypertension. Amyloid angiopathy is considered less likely given the distribution, though not excluded.

CT Angiography of Head and Neck: Within normal limits.

EKG:

Ventricular rate: 75 bpm

PR interval: 220 ms

QRS duration 100 ms

QT/QTc 376/419 ms

Sinus rhythm with 1st degree atrioventricular block

NEUROPSYCHOLOGICAL TESTING:

Montreal Cognitive Assessment 16/30

MEDICINES AT TIME OF INCIDENT:

Allopurinol 300 mg daily
Aspirin 325 mg daily
Atorvastatin 80 mg daily
Cholecalciferol 1000 units daily
Clotrimazole solution daily
Dorzolamide twice daily
Latanoprost daily
Metformin 1000 mg twice daily
Metoprolol succinate 100 mg daily
Montelukast 100 mg daily
Ranitidine 150 mg twice daily
Sertraline 12.5 mg daily
Trazodone 25 mg up to three times a day as needed for agitation

DISPOSITION: Patient remained too aggressive for any facility available to veterans and was placed in a specialized nursing home where he passed away about one year later.

Case 2

PMH:

Senile dementia of the Alzheimer's type
Cerebrovascular disease, S/P stroke
Bifascicular block
Asthma
Benign prostatic hyperplasia
Calcific tendinitis of shoulder
Diabetes mellitus
Diverticulosis
Hypertension
Gout
Hyperlipidemia
Insomnia
Nonexudative age-related macular degeneration
Squamous cell carcinoma of skin
Cataract

IMAGING:

MRI brain

Multiple T2 bright foci subcortical and periventricular white matter of the cerebral hemispheres corresponding to sites of decreased attenuation on recent CT, nonspecific finding suggestive of small vessel ischemic gliotic changes. Mild atrophy.

EKG:

Ventricular rate: 81 bpm

PR interval: 216 ms

QRS duration 130 ms

QT/QTc 424/492 ms

Sinus rhythm with 1st degree atrioventricular block, right bundle branch block and left anterior fascicular block

NEUROPSYCHOLOGICAL TESTING:

Montreal Cognitive Assessment 8/30

MEDICINES AT TIME OF INCIDENT:

Clonazepam 0.5 mg daily

Divalproex (extended release) 1250 gm daily

Gabapentin 300 mg twice daily

Ramelteon 8 mg daily

Risperidone 1 mg twice daily

Trazodone 50 mg twice daily

DISPOSITION: Risperidone was discontinued and patient improved considerably on a regimen of duloxetine 30 mg daily, the remainder of his behavioral regimen remaining essentially unchanged. Patient passed away from a respiratory tract infection about 6 months after this incident.

Supplementary Table 1. Comparison of Baseline and Peak Values*

	Case 1	Case 2
Baseline conductance (μS)	0.12	0.16
Peak conductance (μS)	6.81	8.62
Baseline heart rate (bpm)	60	90
Peak heart rate (bpm)	102	160
Ratio conductance (peak/baseline)	56.8	54.9
Ratio heart rate (peak/baseline)	1.7	1.8

*All values estimated as median over 3 min interval except peaks for Case 2 which were over 1 min.