Neuropsychiatric Masquerades: 
Is it a Horse or a Zebra

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Disclosures

• Neither I nor any member of my immediate family has a financial relationship or interest with any proprietary entity producing health care goods or services related to the content of this CME activity.

• I am a non-conformist and a cynic of current medical establishment.

• I am a polar opposite of being PC. No offense intended if one taken by you.
Anatomy of the talk

• Common types of diagnostic errors
• Few case examples
• Discussion of selected neuropsychiatric masquerades
When you hear the hoof beats, think horses, not zebras
Most mental symptoms are caused by traditional psychiatric syndromes.

Majority of patients with medical and neurological problems will not develop psychiatric symptoms.
Case

- 20 y/o AA female with h/o Bipolar disorder and several psych hospitalizations.
- Admitted a local psych hospital due to decompensation.
- While at psych hospital, she develops increasing confusion and ataxia.
- Transferred to general med-surg hospital.
• Stayed for 2 weeks.
• Here is what happened….
• Psych C-L service consulted. We did the consult and followed her throughout the hospital stay.
• Initial work up showed Normal MRI, but was of poor quality. EEG was normal.
• She remained on the hospitalist service. 8 different hospitalists took care of her during her stay here.
• Her presentation was chalked off to “her psych disorder”, “Neuroleptic Malignant syndrome” etc.
• After some relentless persuasion, I was able to convince the (ever changing) attendings to start aggressive work up.
This is how it ended.....
Repeat MRI
• She ended up in MICU critical care due to respiratory failure and had a seizure.

• I suspected encephalitis. Suggested whole body CT.

• CT of the abdomen revealed presence of Ovarian Teratoma
• Ovarian Teratoma was removed, received plasmapheresis and IVIG treatment.
• She got better with resolution of brain lesions after few weeks.
• She was discharged to home!
• Paraneoplastic Encephalitis was the final diagnosis.
Cognitive Errors in Diagnosis

• Cognitive biases play detrimental role when you clung to robotic models of decision making.

• *Anchoring bias*- Lock onto initial salient features of presentation and then failing to adjust your diagnosis later on when more information is available.

• *Ascertainment bias*- Stereotyping and gender bias

• *Diagnosis momentum*- Carried a diagnosis of bipolar disorder
• **Hindsight bias**- admitted to psych hospital, hence this is psychiatric.

• **Premature closure**- Closing too soon on a diagnosis. “When the diagnosis is made, the thinking stops”.

• **Psych-Out errors**- Everything and anything attributed to prior diagnosis of psych illness.
• *Yin-Yang out*- Patient has been worked up the YinYang. Nothing more to do.

• *Unpacking errors*- Failure to elicit all information.
DSM and its pitfalls

- Symptom clusters assembled under different diagnostic categories.

- Not a medical model.

- Psychiatric symptoms can be a manifestation of variety of medical/neurological/psychiatric conditions.

- Axial diagnoses are not mutually exclusive. For example, Schizophrenia on Axis I and Temporal lobe epilepsy on Axis III.
System Pitfalls

• Not enough time for evaluation- history, history, history/ location, location, location.

• Symptomatic treatment approach.

• Fragmented care, lack of communication.

• Lack of adequate training in psychiatry residency programs in behavioral neurology.
• Economic pressures of medical practice.

• 10-15 minute med checks.
• Robert Spitzer- 2 types of errors leading to misdiagnoses as “functional” psychiatric disorders.

• **Informational errors** - Failure to gather clinical and historical data vital to make correct diagnosis.

• **Criterion errors** - Data is collected but clinician fails to recognize the illness.
• **Norman Geschwind**
  • Emphasized incomplete history taking and failure to recognize regional brain syndromes leading to incorrect diagnoses.

• **Gary Tucker**
  • Emphasized paying attention to clinical course of the disease.
INSIGHT?

SPASM.
Characteristics of Organicity

• Late onset presentation

• Acute onset

• Unusual presentation of known psychiatric disorders

• Treatment refractoriness

• Family history of certain medical/neurological disorders
• Absence of previous psychiatric history

• Fluctuating mental status

• Abnormal vital signs

• Neurological soft/hard signs
66 y/o female, healthy, with no past psych history.

Presents with amotivation, decreased socialization, poor appetite, headaches, memory complaints, occasionally feeling confused.

Labs normal, neuro exam normal

Gets Dx of depression. Given few AD trials.

No response. Worse on some meds.

Detailed history reveals no symptoms of sadness, anhedonia, hopelessness etc.

(+++) apathy/amotivation.

S/S fluctuated.

Neuro exam shows frontal release signs (grasp and glabellar tap)

MRI brain left frontal meningioma with pressure effect

Surgery ➔ Relief of symptoms
Acute Organic Conditions

- Fairly acute onset
- Impaired consciousness, fluctuating mental status
- Inattention, distractibility
- Little purposeful activity, apathetic
- Occasionally hyperactivity, e.g. certain deliriums
- Slow and sparse speech
- Incoherent thought process
• Ideas of reference and delusions, especially persecutory delusions.
• Lack of insight
• Memory difficulties (reduplicative paramnesia)
• Perceptual disturbances
• Hallucinations—visual more common
Chronic Organic Conditions

• Usually insidious onset
• Family, coworkers etc may notice memory impairment, general intellectual decline
• Personality problems less common at first
• Egocentricity, lack of concern for others
• Deterioration of personal hygiene
• Hoarding behavior
• Slowed thinking
• Reduplicative paramnesias- Capgras syndrome, Fregoli syndrome
• Poverty of speech
• Extreme emotional reactions- pathological laughing and crying
Frontal Lobe

• Personality changes most characteristic- disinhibition most common, apathy (pseudomania and pseudodepression)
• Lack of concern for others
• Lack of insight and judgment
• Cognitive deficits- attention, lack of planning, difficulty with multitasking
• “Silent nature” of frontal lesions- can grow large before declaring themselves
Parietal lobe

- Complex cognitive deficits, difficult to pick up on routine mental status exam or MMSE.
- Visuospatial difficulties, constructional dyspraxias
- Topographical disorientation- pt. loses himself in familiar surroundings
- Dominant parietal lobe lesions- Dysphasias, Motor apraxia, Gerstmann’s syndrome
• Non-dominant parietal lesions- left sided neglect, anosognosia, dressing dyspraxia, prosopagnosia
• Reduplicative paramnesia- Capgras, Fregoli
• Neurological exam shows cortical sensory loss, sensory extinction
Temporal lobe

• Dominant temporal lobe lesions - language difficulties
• Bilat. Medial temporal lesions - amnestic syndromes
• Personality changes along with intellectual and neurological deficits (v. Frontal lobes)
• Temporal lobe epilepsy associated symptoms
Occipital lobe

- Visual problems
Neurological Disorders
Epilepsy

• 1% of population

• Psychiatric symptoms- preictal, ictal, postictal and interictal.

• Generalized v. partial (simple or complex)

• Psychiatric symptoms common in CPS
Frontal Seizures

- Variety of clinical pictures that are often bizarre
- Automatisms- anterior and medial frontal lobe, Arm flailing, rubbing, kicking etc.
- Sexual automatisms- pelvic thrusting, genital manipulation
- Vocalizations, shouting, screaming etc.
- Disinhibition- misdiagnosis of mania, psychosis, pseudoseizures
- Difficult to detect on scalp EEG
Parietal seizures

• Sensory symptoms

• Complex hallucinations or disturbance of shape and size
Temporal Lobe Seizures

• Of most interest to psychiatrist

• Auras- often present without ensuing motor convulsion

• Epigastric sensations, depersonalization, derealization, déjà vu, jamais vu, hallucinations, intense fear and anxiety

• Confusion, disordered thinking including thought blocking
• Epileptic fugue states- less common. Patient may wander away from home. Epileptic v. psychogenic ??

• Lesser degree of dissociative episodes.

• Psychoses of epilepsy- Michael Trimble’s work.
TLE Personality
(Gastaut-Geschwind)

• Aggression                          Humorlessness
• Hypergraphia                       Circumstantiality
• Hyper-religiosity
• Ethical/Moral Concerns
• Hypo/Hyper Sexuality
• Elation
• Eccentricity
• Viscosity
Nonconvulsive Status Epilepticus (NCSE)

- Neuropsychiatric symptoms common and often the presenting symptoms.

- Cognitive changes, bizarre behavior, psychosis, affective disturbances, impulse control problems, speech problems, catatonic signs, autonomic disturbances.

- EEG diagnostic.
Brain Tumors

- Usually present with clear neurological s/s.
- Occasionally present with psychiatric s/s at first without overt neurological s/s. Although this is rare.
- Neuroimaging is usually diagnostic.
- Frontal lobe tumors often disguised in their presentation. Often few or no neurological s/s at first.
- May often present as dementing illness. Apathy, somnolence, akinetic mutism, irritability etc.
• Disinhibition, sexual behaviors, childishness.

• Lack of insight is striking.

• **Corpus Callosum Tumors** - often present with psych s/s.- especially anterior and posterior parts of CC

• Rapidly progressive cognitive decline, thought blocking, somnolence etc.
• **Temporal Lobe Tumors**- Highest frequency of mental s/s.

• Memory problems, speech impairment, affective disturbances.

• Occasionally psychotic illness resembling schizophrenia.
• **Diencephalic Tumors**- (thalamus, hypothalamus and 3\textsuperscript{rd} ventricle)

• Marked amnesia, especially 3\textsuperscript{rd} ventricle tumors, Confabulation resembling Korsakoff syndrome

• Somnolence and hypersomnia common.

• Psych s/s due to endocrine dysfunction in pituitary tumors
Multiple Sclerosis

- Multifaceted disease with varied manifestations
- Pts. Often diagnosed with conversion d/o, hysteria, fibromyalgia etc. until neurological deficits emerge
- Cognitive deficits present in up to 2/3 of cases. Often revealed by detailed neuropsych testing.
- Memory problems, attention deficits, problem solving
• Depression common. Reactive at times, but endogenous form may be present for some time before the disease declares itself.
• Euphoria – out of context with pt’s disability. Indicative of neurological damage.
• Bipolar disorder not as common as once thought.
• Presentation with psychosis is rare.
Parkinson’s Disease

- Classic triad- akinesia, rigidity, tremors
- Motor signs may not be evident initially and pt. may present with depression.
- Common features between depression and PD- psychomotor slowing, attention/conc. Deficits, memory problems, flat affect etc.
- Anxiety disorder, social phobia and panic disorder in up to 25 % pts with PD.
• Hallucinations and delusions develop late in the disease. Often s/e of Antiparkinsonian meds.
• Consider PD in elderly pts presenting with depression/anxiety for the first time.
Neurosyphilis

- The Great Imitator
- Made a comeback due to HIV/AIDS.
- Neurosyphilis is a primary form of tertiary syphilis.
- Frontal lobes affected often- personality changes, irritability, decline in personal hygiene, disinhibition/mania etc.
- Dementia and depression now more common.
Herpes Simplex Encephalitis

• Prodrome of 1-7 days of URI followed by headache, fever, bizarre behavior, psychosis and fluctuating mental status.
HIV

- Think of it in a pt presenting with psych s/s without prior history, especially high risk group.
- HIV encephalopathy, AIDS-Dementia complex, opportunistic infections
- Psychiatric s/e of HIV meds.
Frontal Lobe Dementia Complex

• Not so uncommon as once thought.
• Onset usually between 45-70 yrs.
• Deterioration of personality and behavior.
• Disinhibited behavior, apathy, poor insight and judgment, neglect of personal hygiene
• Utilization behavior- tendency to touch things, use objects in sight purposelessly etc.
Pick’s Disease

• Peak onset between 50-60 yrs.
• Disinhibition, egocentricity, indulgence in foolish jokes and pranks, euphoria
• Features of Kluver Bucy syndrome- oral tendencies, overeating, touching objects in sight etc.
Huntington’s Disease

- Onset usually in 40’s & 50’s
- Psychiatric s/s could be present for yrs before neurological s/s become apparent
- Change in personality, paranoia, ideas of reference, depression, anxiety
- Family history.
Medical Disorders
Endocrine Disorders

- Thyroid disorders
  - **Hyperthyroidism** - anxiety, confusion, agitation, hyperactivity, depression, hypomania, psychosis
  - **Hypothyroidism** - Depression, anxiety, apathy, psychomotor slowing, memory problems
  - **Subclinical hypothyroidism**
• Parathyroid disorders
  ➢ Hyperparathyroidism - delirium, depression, anxiety, fatigue. Associated hypomagnesemia can cause psychosis.
  ➢ Hypoparathyroidism - Delirium, depression, anxiety, psychosis
• Adrenal disorders
  ➢ Addison’s disease- fatigue, depression, irritability. Psychosis and confusion can occur.
  ➢ Cushing’s Syndrome- depression, memory problems, psychosis.
• Pancreatic Tumors- depression can be the sole manifestation initially. Consider it in elderly pt with back pain and new onset depression.
Systemic Lupus Erythematosus

- CNS involvement very common.
- Usually appear late in the disease, but can be present before systemic manifestations.
- Can coincide with relapses and remission of the disease itself.
Acute Intermittent Porphyria

- Autosomal dominant transmission, chromosome 11.
- Onset- anytime puberty onwards, 3rd decade most common.
- Physical s/s- acute abdominal pain, N/V, constipation, headache, seizures (20%), peripheral neuropathy
- Psych s/s- 25-75% cases. Wide range of s/s. Acute anxiety, depression, emotional lability, psychosis.
- Precipitants- inadequate nutrition, endocrine factors, ETOH, infections, medications.
Vitamin deficiencies

- B 1- Wernicke’s encephalopathy, chronic alcoholism. Triad of nystagmus, ataxia and ophthalmoplegia. May persist as Korsakoff’s syndrome with amnesia.
- B 12- Psych s/s often antedate anemia, neurological s/s. Depression, psychosis, dementia, delirium.
- Folate
Medications

• Always suspect role of meds in mental status changes.
• Requires careful history taking, collateral info etc.
• Benzodiazepines, opioids, AED, Anti HTN, Anticholinergic, Anti-Parkinsonian, HIV, steroids, chemotherapy agents etc. etc…..
• OTC and Herbal meds.(Ephedra, Triple C)
Substance Abuse

• Most common psychiatric disorder, underdiagnosed, undertreated.
• Alcohol, cocaine, marijuana, opioids, Meth, benzo., inhalants, ecstasy, hallucinogens.
Heavy Metals

• Consider it in appropriate setting.
• Occupational history, environmental exposure.
• 24 hr. urine screen.
Summary

• Think outside the box when dealing with perplexing cases.
• A & B can coexist, A can cause B, B could be due to yet unidentified C.
• History, History, History.
• Clinical course of the disease.
• Consult other physicians.
References


(2) The importance of cognitive errors in diagnosis and strategies to minimize them. Pat Croskerry, MD, PHD, Academic Medicine 2003, 78:775-780.