MEDICAL COMMUNICATIONS

Psychosis, Delirium, or Seizure?

A Cross-Specialty Approach to Acute Behavioral Change

The Same Symptom, Two Specialties

CASE-BASED EDUCATION FOR HEALTHCARE PROFESSIONALS

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Selected Works | Project 4

Acute behavioral change at presentation

Clinical question

In an older adult with abrupt paranoia, agitation, and disorganization, which findings should shift the working diagnosis away from primary psychosis, and when should neurological testing be escalated?

Initial presentation

A 67-year-old man suddenly becomes paranoid, agitated, and disorganized. He accuses his wife of poisoning him and tries to leave the emergency department. The triage note reads **"new psychosis."**

Fictional educational case. All patient details, test results, and treatment responses are constructed for teaching and do not describe a real patient.

Time course and examination

His wife first noticed the dramatic change six hours ago. He was previously independent and has no known psychotic disorder or seizure history. On further questioning, she describes two weeks of repeated questions and fragmented sleep. Today he alternates between pacing and periods of staring, with little recollection afterward.

Temperature is 37.2 C, blood pressure 154/88 mmHg, pulse 96/min, respiratory rate 18/min, and oxygen saturation 97% on room air. Capillary glucose is 108 mg/dL. He is disoriented to place, loses the thread of questions, and cannot sustain an attention task. Alertness fluctuates. There is no obvious limb weakness or meningism on the initial examination.

Why attention changes the priority

Acute fluctuation and impaired attention should move delirium high in the working formulation. A validated bedside assessment such as the 4AT can support recognition; a positive screen requires clinical interpretation and does not identify the cause. In critical care, NICE recommends CAM-ICU or the Intensive Care Delirium Screening Checklist (ICDSC). [1]

In this patient, fluctuation, disorientation, and impaired attention make primary psychosis an inadequate initial explanation. Age and absent psychiatric history add context but do not exclude late-onset psychosis. Medical and substance evaluation remains essential. [1,2]

Immediate priorities

Assess immediate physiological and behavioral risk, obtain collateral history, and maintain a safe monitored environment. Address reversible threats promptly. Use calm communication and involve a familiar person when helpful. Medical assessment should not wait for psychiatric disposition. [1,2]

> **Clinical emphasis: a behavioral label should not close the differential when attention, awareness, or the time course suggests delirium or another acute neurological process.**

Plausible triggers are not the whole explanation

Medication reconciliation

His regular medicines are amlodipine and hydrochlorothiazide. Three nights ago, he started an over-the-counter sleep aid containing diphenhydramine 50 mg nightly. His wife reports no recent alcohol reduction, benzodiazepine cessation, or recreational drug exposure.

The sleep aid is a plausible contributor to confusion; it was started after the memory changes began. Review and stop unnecessary potentially contributing medication. A possible drug effect should not close the differential. [1,3]

Initial investigations

Finding	Case result	Interpretation
Sodium	131 mmol/L	Mild hyponatremia; assess baseline, trajectory, volume status, and medication contribution.
Other chemistry	Potassium 3.8 mmol/L; calcium and magnesium within local ranges	No identified major abnormality explaining the full presentation.
Renal and hepatic tests	Within local reference ranges	Does not exclude neurological or medication-related illness.
Blood count	White blood cells 8.4 x 10^9/L	No leukocytosis; infection is not excluded.
Head CT	No acute hemorrhage or mass effect	Does not exclude early ischemia, seizures, or encephalitis.

Sodium 131 mmol/L and a new sleep aid are clues, not a complete explanation. Interpret the electrolyte result against its baseline and rate of change, and continue reassessment.

A repeat examination changes the priority

A nurse observes three nearly identical episodes: he stops speaking, smacks his lips, and picks at his gown for 60-90 seconds. Afterward, naming is impaired and he does not fully return to his earlier level of responsiveness. There has been no generalized convulsion.

Escalate on the event pattern

Stereotyped episodes with incomplete recovery warrant urgent neurological assessment and EEG. Nonconvulsive seizures may present as altered behavior or awareness. Continuous EEG is appropriate when concern persists or intermittent recording cannot resolve the question. If unavailable locally, arrange urgent specialist discussion and access or transfer according to clinical urgency. [4]

> **Handover should include the observed semiology, episode duration, level of responsiveness, and recovery pattern - not simply the label "agitation" or "confusion."**

The EEG answers one question

EEG and imaging

Urgent video-EEG captures evolving left temporal rhythmic epileptiform activity continuing for 12 minutes, with impaired responsiveness and no prominent convulsive activity. The neurophysiologist identifies an electrographic seizure meeting the duration criterion for electrographic status epilepticus. After seizure control, MRI including diffusion and FLAIR sequences shows no acute infarction or explanatory inflammatory lesion.

Case interpretation

The combination of sustained ictal EEG activity and altered mental status supports nonconvulsive status epilepticus (NCSE). American Clinical Neurophysiology Society terminology defines electrographic status as electrographic seizures lasting at least 10 continuous minutes or occupying at least 20% of a 60-minute recording. These thresholds apply to qualifying ictal patterns; generalized slowing alone is not NCSE. [5]

Under monitored specialist care, parenteral antiseizure treatment terminates the ictal activity. Responsiveness improves, although memory remains impaired. Treatment and airway monitoring follow the local status epilepticus pathway; this piece does not provide a dosing protocol.

Seizure control does not complete the workup

EEG establishes the urgent process. The preceding two-week cognitive change and new seizures still require an etiologic investigation.

Possible autoimmune encephalitis requires a subacute cognitive, mental-status, or psychiatric syndrome; at least one supportive feature such as unexplained new seizures, a focal finding, cerebrospinal fluid (CSF) pleocytosis, or suggestive MRI; and reasonable exclusion of alternatives. A normal MRI or routine CSF result does not exclude it. These are entry criteria for evaluation, not antibody confirmation. [6]

Continue the etiologic investigation

Pending investigations include CSF cell count, protein, glucose, and infectious studies including herpes simplex virus PCR, plus phenotype-directed paired CSF/serum neuronal antibodies. Neurology coordinates lumbar puncture when safe. Empiric intravenous acyclovir begins while infectious encephalitis remains plausible; renal function and local guidance inform prescribing. [7,8]

The immediate diagnosis is NCSE; the underlying cause remains under investigation. Review pending results alongside recovery and EEG monitoring. Autoimmune encephalitis is not confirmed: interpret antibodies against the phenotype, specimen, assay, and alternative causes. [4,6,7]

> **Key distinction: delirium describes a clinical syndrome. Seizures, medication effects, metabolic disturbance, infection, or encephalitis may explain that syndrome. These categories are not mutually exclusive.**

Distinguish the pattern and choose the workup

Working possibility	Features that shift concern	What helps resolve it
Delirium	Acute change, fluctuation, impaired attention or arousal; plausible medical or drug trigger	Collateral baseline, bedside assessment, examination, and cause-directed tests. [1]
Primary psychosis	Psychotic symptoms without a convincing fluctuating disturbance of attention or consciousness	Psychiatric assessment alongside medical and substance evaluation; late onset warrants caution with attribution. [2]
NCSE	Stereotyped spells, automatisms, aphasia, subtle motor signs, or unexplained impaired awareness	Urgent EEG with clinical correlation; prolonged monitoring if suspicion persists. [4,5]
Autoimmune encephalitis	Subacute memory or behavior change with new seizures, movement disorder, focal findings, or autonomic dysfunction	Neurological assessment, MRI, CSF, and targeted antibody testing; exclude infectious and other mimics. [6,7]

Start broad enough to be safe

At the bedside, reassess airway and breathing, circulation, temperature, oxygenation, glucose, attention, and neurological findings. Clarify baseline, last known well, trauma, recent illness, medication changes, substance exposure, and withdrawal risk. Review pain, retention, constipation, hydration, and sensory needs. [1,2]

Initial tests should answer the clinical hypotheses: commonly blood count, electrolytes including calcium and magnesium, renal and hepatic function, and an ECG when medication or cardiac risk is relevant. Add toxicology, blood gas, cultures, or other infection testing when indicated. This is a case-based selection guide, not a mandatory panel for every patient.

Escalate testing for specific clues

New focal deficit or abrupt persistent language disturbance should activate the appropriate acute neurological or stroke assessment. Stereotyped spells or unexplained impaired awareness warrant urgent EEG. Persistent encephalopathy with seizures or other encephalitis features should prompt MRI and lumbar puncture when safe, with specialist-directed infectious and autoimmune testing. Do not wait for the full workup before treating time-critical suspected causes. [4,6-8]

Avoid diagnostic shortcuts

> **A normal CT does not settle the differential. A negative brief EEG does not exclude intermittent seizures. Broad antibody testing without a compatible syndrome may produce misleading results. [4,6,7]**

Red flags and shared clinical responsibility

Urgent escalation

Neurology: new seizures, stereotyped spells, persistent impaired awareness, focal findings, or suspected encephalitis. Emergency and acute medical teams retain responsibility for stabilization; involve critical care for airway compromise, instability, or refractory status. [4,6-8]

Concurrent specialist care

Psychiatry: behavioral distress, suicide or violence risk, catatonic features, or persistent psychosis; immediate safety concerns require urgent input. **Infectious diseases:** suspected CNS infection or complex antimicrobial decisions. Coordinate these assessments while medical investigation continues. [2,8]

Assign a lead team, a monitoring plan, and ownership of pending results. A referral does not transfer responsibility for immediate risk.

Do not miss

- Hypoglycemia, hypoxia, or severe metabolic disturbance.
- Stroke, intracranial hemorrhage, or CNS infection / sepsis.
- Nonconvulsive status epilepticus.
- Toxic exposure or alcohol / benzodiazepine withdrawal.
- Autoimmune encephalitis when the clinical pattern supports it.
- New rigidity, fever, autonomic instability, or catatonia requiring urgent assessment.

Manage agitation without obscuring the assessment

Use de-escalation and address the cause. If medication is necessary for severe distress or immediate risk, select it for the suspected syndrome and monitoring capacity. Haloperidol in older adults requires particular attention to ECG and electrolytes, neurological adverse effects, and contraindications such as Parkinson disease or dementia with Lewy bodies. Use the lowest effective dose for the shortest time when appropriate. Sedation is not diagnostic confirmation. [9]

A concise cross-specialty handover

"67-year-old with two weeks of memory change, then acute fluctuating inattention and stereotyped spells. EEG confirms NCSE, now treated. Memory remains impaired; encephalitis studies are pending. Please confirm monitoring and responsibility for follow-up results."

> **Takeaway: test attention, establish the timeline, and repeat the examination. Treat the urgent process, then pursue its cause. A behavioral label or normal initial scan should not end the assessment.**

References

Educational scope

This fictional case is intended for healthcare professional education. It is not a validated decision tool, an accredited activity, or a substitute for local emergency, neurology, psychiatry, or infectious-disease protocols. No original patient data are included.

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> **Core message: acute behavioral change is a cross-specialty problem. Diagnostic accuracy depends on time course, attention, repeated examination, targeted neurological testing, and clear ownership of unresolved risk.**