

# Did brain trauma lead to crime?

Helen M. Farrell, MD, and Henry A. Nasrallah, MD



## How would you handle this case?

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Mr. P pleads not guilty to rape charges, claiming a head injury 8 years ago caused personality changes, psychosis, and violent behavior. Is he malingering?

### **CASE** Self-reported TBI

When charged with raping a 19-year-old woman, Mr. P, age 32, pleads not guilty by reason of insanity (NGRI). He has a self-reported history of traumatic brain injury (TBI) and claims that since suffering a blow to the head 8 years before the rape, he has experienced episodes of personality changes, psychosis, and violent behavior. Mr. P is adamant that any wrongdoing on his part was beyond his control, and he argues that consequences of the brain injury, such as hallucinations and aggressive behavior, had recently emerged. The court asks that a forensic psychiatrist evaluate Mr. P.

An only child, Mr. P was raised by his mother in an inner city area. His father was dependent on alcohol and cocaine and abandoned the family shortly after Mr. P's birth. Mr. P abuses alcohol, as evidenced by previous driving under the influence charges, but denies illicit drug use. He graduated from high school with average grades and denies a history of disciplinary action at school or home. Although Mr. P was charged with misdemeanors in his late teens, the sexual assault is his first felony charge. Mr. P describes himself as a "charmer."

After high school, Mr. P worked full-time in construction, where he claims he suffered a traumatic blow to the head. Despite this injury, he continued to work and socialize and never sought treatment at a mental health clinic.

### Which cognitive impairment is most common among patients with head injury?

- impaired attention
- memory loss
- impulse dyscontrol
- poor judgment

### The authors' observations

Although defendants may legitimately suffer from TBI and resultant complications, many individuals capitalize on a history of minor head injury to support their NGRI defense.<sup>1</sup> Forensic psychiatrists must retain a healthy degree of clinical suspicion for malingering in defendants who claim NGRI as a result of complications from brain injury, especially when the injury and complications are not documented and simply patient-reported.

TBI is a CNS injury that occurs when an outside force traumatically injures the brain and can cause a variety of physical, cognitive, emotional, and behavioral effects (*Table 1, page 65*).<sup>2</sup> Cognitive deficits include:

- impaired attention
- disrupted insight
- poor judgment
- thought disorders.

Dr. Farrell is a fourth-year psychiatry resident, The University Hospital, University of Cincinnati, OH. Dr. Nasrallah is CURRENT PSYCHIATRY Editor-in-Chief and professor of psychiatry and neuroscience, department of psychiatry, University of Cincinnati, OH.

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**Table 1****TBI symptoms correspond to area of injury**

Area of injury	Motor/sensory	Psychiatric/behavioral	Cognitive
Brain stem	Decreased vital capacity in breathing, dysphagia	Sleep difficulties	Inability to categorize objects, difficulty with organization
Frontal lobe	Aphasia, praxis	Disinhibition, personality changes	Impaired executive function
Cerebellum	Nystagmus, tremor	Labile emotions	Inability to process information
Parietal lobe	Apraxia	Personality changes	Neglect
Occipital lobe	Visual field cuts; diminished proprioception	Visual hallucinations	Color agnosia; inability to recognize words; difficulty reading, writing, and recognizing drawn objects
Temporal lobe	Seizure	Libido changes, humorless verbosity, aggression, olfactory perceptual changes	Prosopagnosia, aphasia, agnosia, memory loss, inattention

TBI: traumatic brain injury  
Source: Reference 2

**Clinical Point**

**Temporal lobe injuries are associated with irritability and aggression**

Reduced processing speed, distractibility, and deficits in executive functions such as abstract reasoning, planning, problem solving, and multitasking have been documented. Memory loss—the most common cognitive impairment among head-injured people—occurs in 20% to 79% of people with closed head trauma, depending on injury severity.<sup>3</sup> People who have suffered TBI may have difficulty understanding or producing spoken or written language, or with more subtle aspects of communication, such as body language.

TBI may cause emotional or behavioral problems and personality changes. Mood and affect changes are common. TBI predisposes patients to obsessive-compulsive disorder, substance abuse, dysthymia, clinical depression, bipolar disorder, phobias, panic disorder, and schizophrenia.<sup>4</sup> Frontal lobe injuries have been correlated with disinhibition and inappropriate or childish behavior, and temporal lobe injuries with irritability and aggression.<sup>5</sup>

**TBI and the insanity defense**

The M'Naghten Rule of 1843 requires that for an insanity defense, the defendant must

**Table 2****Common external incentives for malingering**

Evading criminal responsibility
Disability claims/financial gain
Avoiding military duty
Evading work
Obtaining drugs
Seeking food/shelter

have a mental disease or defect that causes him not to know the nature and quality or the wrongfulness of his act.<sup>6</sup> TBI is an abnormal condition of the mind leading to a mental disease that can substantially affect control of emotions and behaviors.

Nevertheless, TBI-induced criminality remains controversial.<sup>7</sup> Theories on the etiology of impulse dyscontrol resulting from TBI have suggested structural damage to the brain and altered neurotransmitters. In TBI, the amygdala—which is located within the anterior temporal lobe and adjoins emotions to thoughts—often is injured. Damage to this structure leads to poor impulse control and violent behavior. Damage to specific

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**Table 3****Criteria for malingered psychosis**

A. Understandable motive to malingering
B. Marked variability of presentation as evidenced by $\geq 1$ of the following: <ol style="list-style-type: none"> <li>1. Marked discrepancies in interview and non-interview behaviors</li> <li>2. Gross inconsistencies in reported psychotic symptoms</li> <li>3. Blatant contradictions between reported prior episodes and documented psychiatric history</li> </ol>
C. Improbable psychiatric symptoms as evidenced by $\geq 1$ of the following: <ol style="list-style-type: none"> <li>1. Reporting elaborate psychotic symptoms that lack common paranoid, grandiose, or religious themes</li> <li>2. Sudden emergence of purported symptoms to explain antisocial behavior</li> <li>3. Atypical hallucinations and delusions</li> </ol>
D. Confirmation of malingering by either: <ol style="list-style-type: none"> <li>1. Admission of malingering following confrontation, or</li> <li>2. Presence of strong corroborative information, such as psychometric data or history of malingering</li> </ol>
<b>Source:</b> Reference 14

neurotransmitter systems that causes elevated norepinephrine and dopamine levels and reduced serotonin levels have also been implicated as a cause of impulse dyscontrol in TBI patients.<sup>8</sup>

In theory, TBI patients potentially could have enough cognitive impairment to have a substantial lack of appreciation of the criminality or wrongfulness of an act. TBI-related impulsivity and cognitive impairment can lead to recklessness and negligence.<sup>9</sup> The U.S. Supreme Court has acknowledged that CNS dysfunction affects judgment, reality testing, and self-control.<sup>10</sup>

**EVALUATION Vague answers**

To determine whether Mr. P's defense is plausible, the forensic psychiatrist must pay attention to the details of the patient's presentation and history. During the interview, Mr. P quickly shifts from cooperative to obstinate and restricted. He ruminates on the head injury causing him to suffer auditory hallucinations, which he claims he always obeys. Mr. P refuses to provide details of the hallucinations, however, and answers most questions about the head injury or his defense with vague answers, including "I don't know."

Because of Mr. P's reluctance to share information, his lack of psychiatric symptoms other than those he self-reports, and the presence of potential secondary gain from an NGRI defense, the psychiatrist begins to suspect malingering.

**The authors' observations**

Malingering is a condition—not a diagnosis—characterized by intentional production of false or grossly exaggerated physical or psychological symptoms motivated by external incentives.<sup>11</sup> The presence of external incentives distinguishes malingering from psychiatric illnesses such as factitious and somatoform disorders, in which there is no apparent external incentive. Malingering of psychiatric symptoms occurs in up to 20% of forensic patients, 5% of military recruits, and 1% of mental health patients.<sup>5</sup> Stimuli for malingering range from seeking food and shelter to avoiding criminal responsibility (*Table 2, page 65*). Malingering is more common in individuals being evaluated for criminal responsibility than for competence to stand trial. The 3 categories of malingering are:

- pure malingering—feigning a non-existent disorder
- partial malingering—consciously exaggerating real symptoms

**Clinical Point**

If you suspect malingering, combine a structured clinical interview with collateral sources

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Hypotension and circulatory collapse should be treated with appropriate measures, such as intravenous fluids and/or sympathomimetic agents (epinephrine and dopamine should not be used, since beta stimulation may worsen hypotension in the setting of paliperidone-induced alpha blockade). In cases of severe extrapyramidal symptoms, anticholinergic medication should be administered.

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**Table 4****Atypical psychotic symptoms that suggest malingering**

Hallucinations
Continuous rather than intermittent
Vague or inaudible auditory hallucinations
Stilted language reported in hallucinations
Inability to state strategies to diminish voices
Self-report that all command hallucinations were obeyed
Visual hallucinations in black and white
Delusions
Abrupt onset or termination
Eagerness to call attention to delusions
Conduct markedly inconsistent with delusions
Bizarre content without disordered thinking
Source: Reference 14

- false imputation—ascribing real symptoms to a cause the individual knows is unrelated to the symptoms.<sup>12</sup>

Determining if a defendant with a history of TBI is malingering requires a multi-step approach that encompasses the clinical interview, a thorough review of collateral data, and focused psychological testing. In interviews, psychiatrists detect approximately 50% of lies, which is no better than would be discovered by chance.<sup>13</sup> If you suspect a patient is malingering, combine a structured clinical interview with collateral sources such as old hospital records, treatment history, insurance records, police reports, and interviews with close family and friends.

TBI patients' poor cognition, memory deficits, and inattention will prove challenging. Malingering patients who attempt to capitalize on a pre-existing TBI to evade responsibility for a current criminal charge may grossly exaggerate or even fake intellectual deficits. Be patient with such defendants and remain aware that such people will give vague or hedging answers to straightforward questions, often accompanied by "I don't know." Prolonging the interview may be helpful because it may fatigue a defendant who is faking.<sup>12</sup>

Some patients who malingering after sustaining a TBI will attempt to feign psychotic symptoms. *Table 3 (page 67)*<sup>14</sup> illustrates criteria for assessing a patient suspected of malingering psychosis and *Table 4*<sup>14</sup> highlights atypical psychotic symptoms that suggest feigning illness. Malingering of psychosis can be both assessed in the interview and through testing.

Table 5

## Standardized diagnostic instruments for detecting malingering

Test	Clinical use
<b>Personality</b>	
MMPI-2	F scale detects lying. Several validity scales
PAI	Covers a range of axis I and II psychopathology
<b>Psychotic symptoms</b>	
SIRS	Gold standard in detecting exaggerated psychotic symptoms
M-FAST	Screening tool to assess exaggerated psychosis; brief and reliable
<b>Cognitive impairment</b>	
TOMM	Highest validity of all tools to test memory malingering
PDRT	Assesses the possibility of malingering. Not widely studied and validity/reliability are suspect
VSVT	Useful for inpatient and outpatient settings
WMT	Evaluates effort put forth by the participant
<small>M-FAST: Miller Forensic Assessment of Symptoms Test; MMPI-2: Minnesota Multiphasic Personality Inventory; PAI: Personal Assessment Inventory; PDRT: Portland Digit Recognition Test; SIRS: Structured Interview of Reported Symptoms; TOMM: Test of Memory Malingering; VSVT: Victoria Symptoms Validity Test; WMT: Word Memory Test</small>	

### Which test is the gold standard for detecting malingered psychiatric illness?

- Minnesota Multiphasic Personality Inventory (MMPI-2)
- Structured Interview of Reported Symptoms (SIRS)
- Miller Forensic Assessment of Symptoms Test (M-FAST)
- Test of Memory Malingering (TOMM)

### Psychological testing

Several standardized diagnostic instruments can be used to help determine whether a patient is feigning or exaggerating psychotic symptoms or cognitive impairments (*Table 5*). Testing for a patient such as Mr. P—who attributes any criminal wrongdoing to psychosis and also cites limited cognition as a reason for trouble in the interview—would include personality tests, tests to assess exaggerations of psychosis, and cognitive tests.

In the forensic setting, the preferred personality test is the MMPI-2.<sup>15</sup> It consists of 567 items, with 10 clinical scales and several validity scales. The F scale, “faking good” or “faking bad,” detects people who are answering questions with the goal of appearing better or worse than they actually are.

The Personal Assessment Inventory (PAI)<sup>16</sup> is a 344-item test with a 4-point response format. The 22 scales cover a range of important axis I and II psychopathology.

SIRS<sup>17</sup> is the gold standard in detecting malingered psychiatric illness; it includes questions about rare symptoms and uncommon symptom pairing. M-FAST<sup>18</sup> was developed to provide a brief, reliable screen for malingered mental illness. It has shown good validity and high correlation with the SIRS and MMPI-2.

Tests of exaggerated cognitive impairment are extremely important in evaluating patients who claim to suffer from complications following TBI. TOMM<sup>19</sup>—a 50-item recognition test designed to discriminate between true memory-impaired patients and malingerers—is the most studied and valid of such tests. Defendants’ scores that meet the recommended criteria for detecting malingering—≥5 errors on the retention trial—were found to also report a history of head injury.<sup>1</sup>

Although not as well validated, the Portland Digit Recognition Test (PDRT)<sup>20</sup> is an alternative to the TOMM. This test is a forced-choice measure of recognition designed for assessing the possibility of malingering in

### Clinical Point

Prolonging the interview may help by fatiguing a patient who is faking

## Clinical Point

SIRS is the gold standard in detecting malingered psychiatric illness

## Related Resource

Williamson DJ. Neurocognitive impairment: feigned, exaggerated, or real? *Current Psychiatry*. 2007;6(8):19-37.

### Disclosure

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individuals claiming mental illness because of head injury. The Victoria Symptoms Validity Test (VSVT)<sup>21</sup> is used in outpatient and inpatient settings and also uses a forced-choice model to assess possible exaggeration or feigning of cognitive impairments. Finally, the Word Memory Test (WMT)<sup>22</sup> is a neuropsychological assessment that evaluates the effort participants put forth.

## OUTCOME Unsupported claims

Mr. P's hospital records reveal a very minor head trauma that resulted in no structural brain abnormalities on imaging tests. Collateral interviews with Mr. P's family and close friends fail to support the defendant's claim that after the accident he began to experience behavioral changes and periods of psychosis. Mr. P's SIRS and TOMM scores indicate malingering, and the psychiatrist did not support his NGRI defense.

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## Bottom Line

Patients who face criminal charges may plead not guilty by reason of insanity and cite head injury as a cause of their psychiatric symptoms and crime. Traumatic brain injury can produce cognitive and mood symptoms but its role in impulse dyscontrol remains controversial. Forensic psychiatrists must employ structured clinical interviews with collateral records and objective psychological testing to assess such defendants.