

Suspected Conversion Disorder: Foreseeable Risks and Avoidable Errors

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Abstract. The authors reviewed the occurrence in their emergency department of cases of serious neurologic problems initially thought to be conversion disorders or similar psychogenic conditions. Their aim is to indicate the significance of this issue for emergency physicians (EPs) because of its contribution to the incidence of medical errors. Although there are no national statistics, the authors estimate by extrapolation that thousands of such cases probably have occurred and large numbers may still occur each year in the United States, sometimes resulting in patient injury. They have identified ways of anticipating

and attempting to prevent such occurrences. Proposed interventions focus on education regarding the difficulty of diagnosis, patient-based risk factors, and physician-based attitudes and thought processes. The authors also include suggestions for systemic "safety nets" that will help to ensure quality of care, such as appropriate imaging and consultation. Review of texts and journals readily accessible to EPs revealed little attention to this subject. **Key words:** conversion; hysteria; emergency; error; neurology; psychiatry. *ACADEMIC EMERGENCY MEDICINE* 2000; 7: 1272–1277

EMERGENCY physicians (EPs) frequently confront the problem of acute neurologic symptoms in a patient who has no convincing, objective neurologic findings. This may arouse the suspicion of a "psychogenic" disorder. The specific nature of the presumed "nonorganic" problem is frequently not distinctly formulated, but is often diagnosed as a conversion disorder (so-called "hysterical conversion"). In this paper we highlight the occurrence of diagnostic mistakes, illustrate pitfalls, and offer suggestions for processes that physicians and nurses in emergency medicine (EM) can implement to minimize such errors.

We were stimulated to study this problem by a series of cases in which excellent caregivers operating under routine circumstances made diagnostic mistakes or delays that, in retrospect, might seem extraordinary. Such cases highlight the difficult challenges encountered in the emergency care of complicated and unfamiliar patients. We have pursued this investigation from the point of view of error detection and prevention with the purpose of quality improvement and prioritization of training objectives and content.

CASE REPORTS

Study Setting and Case Finding. We studied patients presenting to our emergency department (ED) who came to the attention of the neurology consultation staff over a six-year period (1994 through 1999) because of suspicion of a conversion disorder or similar psychogenic explanation of potentially serious neurologic symptoms. Identification of cases with misdiagnosis or delayed diagnosis of a neurologic syndrome resulted from both retrospective review of consultation records and prospective surveillance by means of educating physicians about our concern over potential occurrences of this type. No additional cases that might have been subsequently evaluated elsewhere were communicated to us. We were not able to identify accurately the denominator of all cases in which conversion or other psychogenic causes of neurologic symptoms were suspected, nor were we able to specify reliably the number of true conversion cases during this time period. The correct neurologic diagnosis was verified by definitive findings on neurologic workup, including imaging. Patients with actual or suspected pseudoseizure were excluded from this analysis because they represent a distinct problem that has received much attention.

We have focused on the recent past in order to place diagnostic decision making well within the era of modern imaging and within the time that we have had access to a nearby resource for emergency magnetic resonance imaging (MRI). The ED of this small, urban, community-oriented teaching hospital in the period of this study averaged more

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than 22,000 visits per year. The separate psychiatric ED averaged more than 5,000 visits per year.

Definitions. Our definition of conversion disorder conforms to the criteria of the *Diagnostic and Statistical Manual of Mental Disorders, 4th Edition* (DSM-IV),¹ which can be paraphrased, in part, as: One or more symptoms or deficits affecting voluntary motor or sensory function that suggest a neurologic or other general medical condition; association with psychological factors, and lacking feigned symptoms; not fully explainable by appropriate medical investigation; significant distress or impairment of function, not limited to pain or sexual dysfunction.

“Conversion” in practice often serves as a surrogate for a broader variety of nonmalingering presentations in which the neurologic deficits are believed to be “unreal.” We have used traditional dualistic brain (“organic”) vs mind (“psychogenic”) terms for convenience, recognizing the need for new ways of expressing the difference between presently identifiable and nonidentifiable nervous system mechanisms.

In order to assess the educational resources available to EPs and general physicians, we reviewed more than 30 leading textbooks and manuals of EM, medicine, family practice, psychiatry, and neurology, and searched the journal literature to identify the guidance provided to nonneurologists.

Cases. In the six-year period 1994 through 1999, we identified six cases in which major, presumptively neurologic symptoms were initially suspected to be due to conversion disorder (or a superficially similar psychogenic cause), but in which serious organic pathology was finally diagnosed.

Patient 1. A 66-year-old woman with schizophrenia presented with inability to void and complaint of “my legs hurt, I can’t move them.” She was regarded as a verbally rambling, anxious, and unreliable historian with no focal neurologic deficits and no bona fide neurologic problem. She was admitted and treated for a urinary tract infection, but her neurologic complaints continued to be minimized as functional. The cause for her leg symptoms was not correctly diagnosed until two days later, when an MRI showed spinal cord compression due to a compression fracture with a thoracic disc herniation.

Patient 2. An 82-year-old woman with a history of depression was evaluated because of “not being able to get up” and because her legs were numb and painful. Because she “moved” all limbs, deep

tendon reflexes were 1 plus, plantar responses flexor, and no sensory deficit was recognized, her symptoms were assumed to be psychogenic. She was admitted to the hospital. Two days later an MRI revealed a thoracic epidural abscess compressing the cord.

Patient 3. A 43-year-old male prisoner was brought in from jail (just prior to a court appearance) because of complaint of right-sided weakness, numbness, and pain in his neck and back. He was found to be very hard to examine because of his severe pain and apparent inconsistencies in his motor and sensory examination. Conversion disorder or malingering was suspected and discharge to jail with prescription of analgesics was planned, but the patient angrily insisted on a more thorough workup, since he had “a history of being misdiagnosed” for prior problems. With this implicit threat of litigation, the consulting neurologist was called, who detected a substratum of weakness beneath the variable effort. An MRI demonstrated a cervical disc herniation with compression of the cervical cord.

Patient 4. A hostile, known sociopathic, 39-year-old male intravenous drug abuser, with a history of incarceration for major violence, presented late one night with complaints of abdominal pain, low back pain, and bilateral leg numbness. After a limited exam, complicated by frightening threats made by the patient, the EP suspected that the problem was psychogenic, either conversion disorder or possibly malingering and drug seeking. However, the EP later reconsidered his degree of diagnostic certainty and called the neurologist, who suggested further evaluation, which revealed pathologic reflexes and urinary retention. Armed with these “hard findings,” an MRI now appeared justified and showed spinal cord compression at cord level T 9–10, due to *Staphylococcus aureus* abscess.

Patient 5. A 24-year-old woman in the seventh month of pregnancy presented to the ED because of one week of increasing low back pain, numbness in the legs and the saddle area, and lower limb weakness. An orthopedic resident, called in consultation, diagnosed a conversion disorder. The consulting obstetrician harbored doubts, however, and somewhat apologetically summoned the neurologist. A cauda equina syndrome was diagnosed and documented by MRI to be due to a herniated lumbar disc.

Patient 6. A 36-year-old woman with a history of remote psychiatric problems and substance abuse was evaluated for weakness in her left arm, first

noted while lying on her side in bed. She was observed to drool and to have a possible mild left facial droop, and she was believed to be underconcerned. She had just learned that she was pregnant. As she confided this information, she “brightened.” She did not move her left arm at all when requested, but was seen by the triage nurse to push back her hair with her left arm. The triage nurse diagnosed “r/o conversion reaction” because of seeming inconsistencies in her deficits and because of her psychic conflict. The ED medical resident and the psychiatry resident followed suit (based in part on a nondermatomal sensory loss, judged to be nonanatomic.) The patient would not answer some questions, posed by someone standing to her left. Sent home for follow-up the next day, she returned and was admitted to psychiatry. An expedited head computed tomogram (CT) was requested, which revealed a large right frontoparietal hematoma, cause undetermined. The neurosurgeon elected nonoperative management, and the patient improved substantially over time.

Review of Didactic Sources. Our extensive review of the journal and textbook literature that EPs might be likely to consult revealed remarkably little attention to issues of misdiagnosis of conversion. The neurology text by Adams and colleagues provides quite an extensive discussion of several facets of conversion, but, as with other sources, only very limited, specific guidance for avoiding errors is offered.² Generalizations about the need for appropriate medical workup are standard fare. However, the literature does not convey the great difficulty of diagnosis for EPs and what processes will contribute to effective ED management of such presentations.

DISCUSSION

We identified three prior studies that addressed actual or suspected conversion disorder from an ED perspective. Dula and DeNaples drew on ED records of patients who were established to have true conversion disorder.³ More pertinent to our paper was a study, published in the psychiatric literature by Fishbain and Goldberg, showing the opposite side of the conversion coin: More than 4,000 patients seen in 1982 for new psychiatric symptoms included three cases (with many striking similarities to ours) of serious neurologic problems misdiagnosed as conversion.⁴ Jones and Barklage reported two cases of misdiagnosed brain tumor, one of which involved the ED, and the authors emphasized the hazards of the diagnosis of conversion disorder.⁵ The classic studies of misdiagnosis of conversion disorder, stimulated especially by Sla-

ter’s 1965 report from a selective, neurologic referral institute, focus on chronic neurologic conditions and apply only to the emergency situation in a general hospital insofar as the mind-set and diagnostic process of the clinician are concerned.^{6–10}

Two of our six cases (patients 5 and 6), would have been candidates for the diagnosis of true conversion disorder, were it not for the incomplete neurologic workup. Conversion disorder was less clearly an appropriate differential diagnosis in patients 3 and 4, since the putative psychogenicity was muddled by concerns about malingering and drug seeking, respectively. Nonetheless, in suspecting a psychologic explanation of the motor and sensory deficits, the physicians initially viewed these cases as if they were conversion. Even in the two elder women with background mental illness, who would have been unlikely candidates for conversion disorder because of age and alternative psychiatric diagnoses, the tenor of thinking was that the neurologic symptoms “weren’t real.” In contemporary EM and general medical practice, this is the way that we sometimes see the term “(hysterical) conversion” used—as a surrogate term for psychogenic, “functional,” “unreal” neurologic problems that are often assumed to be triggered by a psychological event, including stress. Thus, from a practical standpoint, we are not concerned in the ED with the accuracy of the psychiatric terminology, but with the management of cases falling under the popular rubric of suspected conversion, broadly construed.

With patients 1 and 2, the delay in diagnosis and intervention may possibly have worsened the outcome, and certainly there is a serious potential for so doing in instances of spinal cord compression. It is axiomatic that time is of the essence in diagnosis and treatment of incipient paraplegia or quadriplegia because of the risk of permanent disability, thus placing a premium on an early and high index of suspicion. Thus, from the standpoint of process, delay in diagnosis should be considered tantamount to misdiagnosis, as should emphasis on vague or marginal diagnoses that distract from the central problem. In addition, in these cases, as well as with patients 5 and 6, a measure of preserved function (especially in the absence of “hard findings”) appeared to negate the reality of the neurologic symptoms or signs, although most such problems develop by degrees.

With patient 3 the patient’s attitude and behavior, seemingly driven by ulterior motives, but actually reinforcing the need for definitive workup, prevented a potentially bad outcome. A nonneurologic specialist “pulled the chestnuts from the fire” with patient 5 by refusing to accept a diagnosis of conversion, and an EP did likewise with patient 4 by critically reflecting and making a last-minute,

apologetic call to the neurologist. This resulted in redirecting the care process to the right conclusion. Not uncommonly, the management of such cases balances on a razor's edge of critical reappraisal vs a variety of pressures to act without further reflection or consultation. One of these pressures is a reluctance to seek help from consultants who might sometimes communicate ill-disguised disdain for the gullibility of the EP or primary physician. With patient 6, the patient's large intracerebral hematoma probably narrowly missed a critical threshold for a very bad outcome.

The Role of Imaging. The major barriers to correct diagnosis in cases of suspected conversion disorder have always been cognitive and attitudinal, as much as technical. Nonetheless, advances in noninvasive imaging have shifted the burden of diagnostic management. The prominence of spinal cases emphasizes how difficult the assessment of reported problems with stance, gait, falls, and back pain can be, and how much MRI helps when it is available.

For EDs without access to MRI, the threat of spinal cord compression poses the difficult dilemma of how best to manage an ambiguous case when the options are extensive scanning by CT, if available, myelography with its discomforts and risks, and the hazards of simple clinical observation. The widespread use of CT scanning, which suffices to rule out most cerebral mass lesions and subarachnoid hemorrhage, has undoubtedly served to reduce the misdiagnosis of symptoms and signs referable to the brain. The absence of easy access to MRI, in patients with symptoms potentially referable to cord compression, places a burden on EPs. With further improvements in access to sophisticated imaging for emergency patients, EPs will increasingly be able to collaborate with consultants to rule in or out, on the spot, the most critical neurologic syndromes in cases of suspected conversion and other so-called "functional" disorders.

Cognitive and Attitudinal Factors of the Physician and Other Caregivers. Our cases illustrate many of the pitfalls of diagnosing conversion disorders and other psychogenic explanations of neurologic symptoms:

1. A symptom or other aspect of the history or exam is "too bizarre—it can't be real." (But it may be! Some neurologic events are even stranger than psychiatric ones.)
2. "I've never seen anything like it"—it's "beyond all of my experience." (Your experience may be limited).
3. The findings are "nonanatomic." (But is your anatomic knowledge foolproof?)

4. The findings are inconsistent, effort is hesitant, resistance is yielding ("give-away" weakness), or results are unreliable, as with patients 3 and 6. (This is a major trap! There are many physiologic and pathologic reasons for variable, inconsistent findings, including the examiner's inconsistent input. Apparent improvement with reassurance does not prove psychogenicity, as neurologic outputs are very dependent on the input mode.)

5. The patient's "inappropriate" affect or behavior (histrionic, flat, unconcerned) reveals the diagnosis. (In fact, seemingly inappropriate affect might come from overt cerebral pathology, as with patient 6. In addition, there is enormous individual variation and lack of specificity).¹¹

6. "Psychologic explanations can validate a diagnosis of conversion." (As with patient 6, psychologic explanations can be very seductive to the clinician. Neurologic deficits can masquerade as psychologic problems. In this case there was inattention to the left side, clinically associated with a right brain lesion.)

As with patient 6, emergency physicians and psychiatric physicians and nurses, triage nurses, and even emergency medical technicians may be complicit in skewed interpretation of the presenting history and behavior. Biased perceptions may then lead to selective observation, examination, and test ordering, all contributing to a vicious circle of reinforcing errors. The corrective attitude is one of critical thinking and tenacious open-mindedness by every participant at every step. Even patients themselves and family members and friends sometimes unwittingly join this interplay of unwarranted assumptions, attributions, and impressions. Observations that bias caregivers are often repeated from one observer to the next, resulting in a chain of presumption in favor of a psychogenic cause and against a neurologic explanation.

Patient-based Factors in Misdiagnosis. Based on these six illustrative cases and our earlier experiences with such problems, we postulate a number of "patient factors" that may predispose physicians to medical errors, whether these are significant delays or outright misdiagnosis. The patient is not to be faulted for these characteristics, but they are real risk factors and may interact with biases and understandable reactions to past experiences on the part of the clinician. These conditions need to be recognized as "red flags," just as with medical background disorders, such as HIV positivity, or with altered physiologic states, such as pregnancy. It is critical that physicians remain aware that they may be biased against making a diagnosis of neurologic or other medical illness in a patient who has these characteristics (even if

that patient is equally or more likely to harbor an organic problem):

1. history of past or concurrent psychiatric illness or encounters
2. history of substance abuse or drug-seeking behavior
3. history of somatization
4. current or temporally related emotional crisis
5. high level of stress
6. cultural or language differences
7. abnormal or unexpected affect
8. histrionic behavior
9. sociopathic or hostile behavior
10. known or potential medical conditions, such as diabetes, that might mask or confound detection or interpretation of symptoms or signs

Magnitude of the Problem. The occurrence of one serious, acute case per year of misdiagnosis of conversion or “near-miss” in this small hospital during a six-year period should alert EPs, primary physicians, and specialists alike to a vulnerable spot in the provision of emergency care. Fishbain and Goldberg⁴ found three cases of suspected conversion disorder, or an incidence of 0.07% of all cases of new symptoms in their psychiatric ED, lower than the 0.23% and 1% incidences of conversion in other studies they cite. However, all three of their cases of suspected conversion represented misdiagnosis of serious neurologic disorders. Neither their data nor ours are sufficient to establish generalizable incidences of correctly or incorrectly suspected conversion disorder in EDs. However, assuming that our care might be typical, our experience suggests that the vulnerability to mistakes may be widespread.

To frame the possible magnitude of the problem, we can extrapolate from the number of actual instances in our hospital and that of Fishbain and Goldberg to the more than 6,000 hospitals in the United States.¹² If we were to apply even half of our average occurrence of one problem case per year or their single-year total of three cases (both from EDs of modest size), we might predict between 3,000 and 18,000 cases per year. Even if the results of this extrapolation were excessive (especially since the cases of Fishbain and Goldberg were from the pre-MRI era), it is likely that the annual number of such occurrences in the United States has been, and may still be, in four figures. With attention to this problem, the true incidence can be reduced dramatically before prospective studies definitively quantitate it.

Avoidance of Error. The misdiagnoses illustrated here might seem like inexplicable outliers of a reasonable standard of care. However, we know from the “errors” literature that a significant

incidence of mistakes is the rule, not the exception.^{13,14} Fine doctors in fine institutions make errors, and these are unimaginable only in retrospect. The following general guidelines for approaching suspected conversion disorder (and other unspecified “psychogenic” conditions) may be helpful:

1. Recognize the great difficulty of accurately diagnosing a psychologic cause for potentially serious neurologic symptoms. The EP who considers a diagnosis of conversion should have a very low threshold for seeking sophisticated imaging or neurologic input if there is any doubt.
2. Even when the patient is suggestible and elaborates symptoms, look for an “organic nidus,” or minor, true neurologic deficit upon which the patient elaborates.
3. As shown by the potential for worsening of outcome in two of our cases, and the close brush with dangerous misdiagnosis in three others, the stakes can be very high. Virtual certainty in ruling out serious and treatable neurologic disease should be the goal. The downside of a workup is minimal, especially when there is access to noninvasive imaging.
4. Clinicians need to be reflective and self-aware of their level of understanding, degree of experience with such cases, and ability to interpret confounding factors, such as severe pain (as with our patient 3). They must also remain self-aware regarding their own biases regarding off-putting patients.
5. Contrary to some texts, it is not easy to interpret the array of clues and “tricks” that are often touted to unmask pseudoneurologic signs. Misconstructing the results of such maneuvers (“the patient showed inconsistent effort”) may compound the risk of diagnostic error.
6. Respecting the difficulty of such cases, clinicians need to avoid premature closure once they find a plausible explanation. Careful attention to process includes a thorough history and exam that is independent of prior assumptions; articulation of a full differential diagnosis and worst-case scenarios; critical appraisal of any postulated diagnosis of conversion or other psychogenic attribution; and a readiness to seek assistance when there is any doubt. We have adopted the tactic of warning ourselves, whenever we are tempted to make the diagnosis of conversion disorder, “I am taking the chance of making a terrible error. Do I really have compelling evidence for this diagnosis?” We then make doubly sure that a mistake is not in the offing.

CONCLUSIONS

Misdiagnosis of serious neurologic conditions as conversion disorder (or other psychogenic prob-

lems) represents a significant challenge in the field of medical errors, although the frequency in an individual ED may be low. Legal vulnerability aside, the current focus in the United States and elsewhere on reducing errors and iatrogenic injury reinforces the need for the education of physicians and nurses in the difficult area of suspected psychogenicity of acute neurologic symptoms. Critical thinking and an understanding of both physician-based and patient-based risk factors can contribute to correct diagnosis, optimal care, and patient safety. In addition to educational interventions, a quality improvement approach would require reassessment of the diagnostic "safety net" to determine whether procedures for supervision, review, testing, and consultation are sufficient to prevent mistakes.

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