CASE REPORT

J. Arturo Silva,[1] M.D.; Gregory B. Leong,[2] M.D.; Robert Weinstock,[3] M.D.; and Cheryl L. Gonzales,[4] M.D.

A Case of Cotard's Syndrome Associated with Self-Starvation*

REFERENCE: Silva JA, Leong GB, Weinstock R, Gonzales CL. A case of Cotard's syndrome associated with self-starvation. J Forensic Sci 2000;45(1):188–190.

ABSTRACT: Cotard's syndrome is a psychotic condition often associated with nihilistic delusions. This syndrome can be associated with destructive behaviors directed at the self and/or others. In this report we highlight the psychiatric-legal issues involving a case of Cotard's syndrome associated with self-starvation.

KEYWORDS: forensic science, Cotard's syndrome, major depressive disorder, self-destructive behavior, self-starvation, mental disorder, forensic psychiatry

In 1880 Cotard introduced the term, "délire de negation," which referred to nihilistic delusions and what has come to be known as Cotard's syndrome (1). This condition is generally thought to be characterized by various degrees of delusional beliefs in which different aspects of existence are negated or otherwise experienced from a negative perspective (2). Cotard's syndrome may be divided into "subjective" and "objective" types. In the subjective type, affected individuals deny the existence of the self (1), although they are able to visually recognize themselves and are cognitively able to identify their psychological identity accurately. A person with the objective type is driven to deny his or her environment and, in fact, the existence of the entire universe may be denied (1). During the 20th century, Cotard's syndrome has continued to attract the attention of diagnostic phenomenologists. Currently, many investigators of Cotard's syndrome conceptualize it as at least a component of a mental disorder, frequently a major depressive disorder (3). However, the issue of whether the Cotard's phenomenon constitutes a unique mental disorder, a discrete syndrome, or merely a psychiatric symptom remains unanswered (2).

In-depth analysis of Cotard's phenomenon from a forensic psychiatric perspective has been scant. However, given that the syndrome can occur in severe cases of major depressive disorder (1,3), it is likely that some individuals may be substantially disabled by the Cotard's delusion in conjunction with other depressive symptoms. In this article we will describe a case of Cotard's syndrome that led to involuntary commitment due to self-destructive behavior in the form of self-starvation. We discuss the way in which both phenomenological as well as biological factors may be related to the development of psychiatric disability in the context of Cotard's syndrome.

Case History

Mr. K is a 46-year-old male who was involuntarily hospitalized for grave disability because of his refusal to eat. Three months prior to admission Mr. K had developed the idea that he was dead. At one point he had stated that he was a ghost and that no one could see him. He explained that his physical body had been transformed into the immaterial body of a ghost. Nevertheless, he indicated that he visualized his body without any difficulty. About two months prior to admission he had concluded that eating was unnecessary since he was already dead. Consequently, he lost approximately 30 pounds in a two-month period. He gave his religious background as Protestant. He also stated that he experienced great guilt for his sin of failing to adequately provide for his family in the previous year and therefore deserved to be dead but denied any intentions of harming himself. Mr. K further stated that even when he had been alive he did not deserve to live. Mr. K exhibited circumstantial thought as well as illogical thinking. He displayed extreme suspiciousness towards others. He acknowledged feeling very depressed and his affect was flat. Nevertheless, he denied believing that he was suffering from psychiatric problems. He was alert and well oriented. Intermittently he believed that members of the hospital staff resembled people he had known in the past and accordingly wondered if they had been taken over by other people's minds. These latter beliefs were not strongly held as he discounted them upon further reflection. He denied that his environment appeared unfamiliar.

Mr. K first became mentally ill at age 20. In previous years he had experienced episodes of mania characterized by diminished

[1] Staff psychiatrist, Palo Alto Veterans Health Care System, Menlo Park Division, Palo Alto, CA.
[2] Staff psychiatrist, Western State Hospital, Tacoma, WA.
[3] Clinical professor of psychiatry, University of California, Los Angeles School of Medicine, Los Angeles, CA.
[4] Assistant professor of psychiatry, University of Texas Health Science Center at San Antonio and staff psychiatrist, South Texas Veterans Health Care System, San Antonio, TX.

* The views expressed in this report are solely those of the authors and may not necessarily reflect the position of the Department of Veterans Affairs, State of Washington Department of Social and Health Services, University of California, Los Angeles, or the University of Texas Health Science Center at San Antonio.

Received 11 Jan. 1999; and in revised form 6 Apr. 1999; accepted 6 Apr. 1999.

need for sleep, agitation, increased impulsivity, racing thoughts, and increased goal-directed activity. In addition he experienced grandiose delusions in which he believed that he was endowed with special healing powers. He also reported having experienced severe depressive episodes dating back to his early 20s.

His complete blood count, serum chemistries, and urinalysis were within normal limits. His head CT scan was normal. Psychological testing included the Benton Facial Recognition Test (BFRT) (4) and Warrington Memory Recognition Test (WRMT) (5). The BFRT score of 45 is within normal limits. The WRMT score on the word subtest of 49 is at the 91st percentile for a normal sample; and the WRMT score on the face subtest of 39 is below the 10th percentile for a normal sample. On the Buss-Durkee Hostility Inventory he scored well below average on all the scales, except for the guilt scale for which he had a maximum possible score of 9 (6).

Mr. K met DSM-IV criteria for bipolar disorder, depressed, with psychotic features (7). Upon treatment with antipsychotic and antidepressant medications, his depression, paranoid ideation, and Cotard's delusion resolved after approximately one month. He also resumed eating regularly and regained his weight during hospitalization.

Discussion

Diagnostic and Phenomenologic Aspects of the Case

Mr. K experienced a constellation of symptoms associated with a prominent delusion of nihilism (1,8,9). Furthermore, he believed that he himself was dead and at times he appeared to believe that the existence of his body was in doubt and that he was an invisible ghost (1). These considerations are strongly suggestive of Cotard's syndrome, subjective type. There is also a more systematic approach that is indicative of Cotard's syndrome in Mr. K's case. Recently Young and Leafhead conducted an analysis of Cotard's original "pure" cases (2). These cases are defined as pure insofar as these patients were not suffering from any delusion other than nihilistic spectrum delusions (9). They found that these patients presented with 31 symptoms that could be grouped into six categories: general nihilistic delusions, self-nihilistic delusions, self-deprecatory delusions, bodily delusions, perceptual abnormalities, and certain behavioral manifestations. Cotard's cases were found to fulfill three to six categories with an average of 4.4 categories per case. In Mr. K's case he presented with symptoms in five of the six categories. The category of general nihilistic delusions was not met since the patient did not present with either negation of others or of the environment (see Table 1). The presence of symptoms in five out of a possible six categories constitutes strong evidence that Mr. K qualifies as a case of Cotard's syndrome, particularly when compared with Cotard's original "pure" cases (2,9). From a diagnostic standpoint he was suffering from a severe episode of depression in the context of schizoaffective disorder. This case of Cotard's syndrome associated with schizoaffective disorder is not diagnostically typical for cases of Cotard's syndrome. Most cases of Cotard's syndrome are associated with depressive symptoms associated with major depressive disorder (3). However, Cotard's syndrome has also been noted to co-occur with other mental disorders, including schizophrenia (10,11), mental retardation (12), bipolar disorder (11), and disorders secondary to general medical conditions such as brain injury (13), seizure disorder (14), and typhoid fever (15).

TABLE 1—*Categories and symptoms of Cotard's syndrome present in index case.*

Category	Symptoms Present
General nihilistic delusions	None
Self-nihilistic delusions	Negation of self
	Belief he is dead
Self-deprecatory delusions	Self-accusatory delusions
	Feeling of guilt
	Belief that one is damned
Bodily delusions	Metamorphosis
Perceptual abnormalities	Visual illusions
Behavioral manifestations	Refusal to eat

Biological Aspects of Cotard's Syndrome

Cotard's syndrome occurs within the context of major psychiatric disorders that either are thought to have structural or neurochemical cerebral abnormalities such as in schizophrenia, major depression (16), or psychotic disorders due to general medical condition (17). Therefore, an understanding of Cotard's syndrome from a neuropsychiatric point of view may provide some clues regarding the nature of the genesis of nihilistic delusions and consequent disability.

There is little information suggesting a specific neuroanatomical basis underlying Cotard's syndrome. However, a potentially relevant clue may be the fact that the affected person usually questions the authenticity of the self and/or the environment by insisting that what appears to exist does not in fact exist. This stance is reminiscent of cases of delusional misidentification phenomena where the authenticity of the self, others, or the environment is questioned (18–20). However, whereas in delusional misidentification the alleged lack of authenticity is explained as a form of substitution or transformation of identities with radically different identities (19,21), in Cotard's syndrome the lack of authenticity is delusionally explained by "non-existence" of identity (22). Moreover, in addition to phenomenological similarities between Cotard's syndrome and delusional misidentification syndromes, there may also be common neurobiological factors. In delusional misidentification syndromes, there is evidence suggesting that non-dominant cerebral abnormalities may be implicated (23). Moreover, face recognition processing studies also suggest that delusional misidentification syndromes can be associated with abnormalities of face processing such as face recognition memory for unfamiliar faces and linking familiar faces with affect in memory (24). In Cotard's syndrome similar neuropsychological deficits have been observed. For example, Young and colleagues studied a case of Cotard's syndrome in which a 28-year-old man with a history of hemorrhagic contusions that damaged the right temporal area extending to the right internal capsule and possibly the right parietal area. Their patient exhibited deficits in recognition of emotional facial expressions and memory recognition for unfamiliar faces (13). In a case of objective Cotard's syndrome described by Silva and Leong, a 62-year-old female displayed deficits in memory recognition for unfamiliar faces (22). Thus, the available phenomenological and neuropsychological information for delusional misidentification and Cotard's syndromes suggests that non-dominant cerebral deficits may be a significant etiologic factor. Mr. K's presentation also is consistent with this interpretation in that the WMRT showed impairment in memory recognition for faces but not for words. However, the normal re-

sults of the BFRT suggest that face processing abnormalities are not found at the level of immediate recognition for unfamiliar faces.

Psychiatric-Legal Implications

Delusional thinking may potentially lead to serious life-threatening impairment in the affected individual. For example, a person whose behavior is influenced by a grandiose delusion may walk toward oncoming traffic believing in his or her indestructibility. Yet another may delusionally believe that he is an important religious figure who requires few or no clothes and decides to brave inclement freezing weather thereby placing his physical well-being at extreme jeopardy.

Likewise, a person suffering from Cotard's syndrome can also exhibit markedly impaired judgment. In cases of subjective Cotard's syndrome such as that of Mr. K, the person is likely to mistake the actual nature of his own body. This is the case because individuals with Cotard's delusion often subscribe to the idea that the body has no substance. Mr. K believed his body to be that of a ghost who could not be seen by others.

Most importantly with regard to his personal health and safety, he believed that since he was dead his body required no nourishment. His elective self-starvation led to serious weight loss and, although cooperative with eating at staff request, he had no initiative to eat autonomously. His disinterest in eating was based on the premise that food should not be wasted on him, a dead person, but instead should be distributed to "living people."

It is not uncommon for individuals with Cotard's delusion to come to psychiatric attention due to their refusal to eat. Refusal to take nourishment was noted by Cotard himself (9). Young and Leafhead described five of eight pure Cotard's cases presenting with refusal to eat (2). This has psychiatric-legal implications under the auspices of either a danger to self criterion or a grave disability criterion for involuntary civil commitment, depending on the specific jurisdiction's statutory language. In believing themselves to not require food and subjecting themselves to significant, sometimes life-threatening weight loss, coupled with the lack of insight inherent in the Cotard delusion, individuals such as Mr. K can often meet such statutory criteria.

We further hypothesize that Mr. K's delusional misperceptions and neuropsychological impairment in visual processing of faces not only may facilitate the genesis of his Cotard's syndrome but may also help to explain his self-starvation. In other words, his visual-perceptual deficits fueled the delusion to the extent that his own physical existence or essential substance was denied. In turn these beliefs in lack of bodily existence appeared to have motivated the patient to conclude that it was unnecessary to feed a nonexistent body. Other auxillary symptoms commonly associated with Cotard's syndrome include the delusion that one is condemned and must pay for one's sins, may also have contributed to Mr. K's anorectic behavior, i.e., to deny himself nutrition as a form of punishment for past misdeeds. These symptoms appeared to be related to a significant level of hostility toward the self in the form of guilt. Mr. K's high score on the guilt scale of the Buss-Durkee Hostility Inventory is also consistent with this interpretation. Such possible explanations will require further exploration with a more extensive number of Cotard's syndrome cases.

Attempting to understand individuals with Cotard's syndrome from both a phenomenological as well as biological viewpoint may eventually pave the way for clearer connections between psychological and biological causation, as well as behavioral disability recognized by the law, in persons who meet criteria for involuntary civil commitment.

References

1. Enoch MD, Trethowan WH. Uncommon psychiatric syndromes, 2nd ed. Bristol, England: John Wright and Sons, 1979;116–33.
2. Young AW, Leafhead KM. Betwixt life and death: case studies of the Cotard delusion. In: Halligan PW, Marshall JC, editors. Method in madness: case studies in cognitive neuropsychiatry. Hove, East Sussex, U.K.: Psychology Press, 1996;147–71.
3. Berrios GE, Lugue R. Cotard's syndrome: analysis of 100 cases. Acta Psychiatr Scand 1995;91:185–8.
4. Benton Al, des Hamsher K, Varney HR, Spreen O. Contributors to neuropsychological assessment: a clinical manual. New York: Oxford University Press, 1983.
5. Warrington EK. Memory test manual. Berkshire, England: Nfer-Nelson, 1984.
6. Buss AH, Durkee A. An inventory for assessing different kinds of hostility. Journal of Consulting Psychology 1957;21:343–9.
7. American Psychiatric Association. Diagnostic and statistical manual of mental disorders, 4th ed. Washington, DC: American Psychiatric Association, 1994.
8. Cotard J. Du délire hypocondriaque dans une forme grave de la mélancolie anxieuse. Ann Med Psychol 1880;38:168–70.
9. Cotard J. Du délire des negations. Archives de Neurologie 1882;4:152–70, 282–96.
10. Joseph A. Cotard's syndrome in a patient with coexistent Capgras' syndrome, syndrome of subjective doubles and palinopsia. J Clin Psychiatry 1986;47:605–6.
11. Joseph AR, O'Leary DH. Brain atrophy and interhemispheric fissure enlargement in Cotard's syndrome. J Clin Psychiatry 1986;47:518–20.
12. Kearns A. Cotard's syndrome in a mentally handicapped man. Br J Psychiatry 1987;150:112–4.
13. Young AW, Robertson IH, Hellawell DJ, dePauw KW, Pentland B. Cotard delusion after brain injury. Psychol Med 1992;22:794–804.
14. Drake ME. Cotard's syndrome and temporal lobe epilepsy. Psychiatr J Univ Ottawa 1988;13:36–9.
15. Campbell S, Volow MR, Cavenar JO Jr. Cotard's syndrome and the psychiatric manifestations of typhoid fever. Am J Psychiatry 1981;138: 1377–8.
16. Nemeroff CB, Musselman DL, Nathan KI, Shatzberg AF, Knable MB, Kleinman JE, et al. Pathophysiological basis of psychiatric disorders: focus on mood disorders and schizophrenia. In: Tasman A, Kay J, Lieberman JA, editors. Psychiatry, Volume 1. Philadelphia: WB Saunders Company, 1997;258–311.
17. Cummings JL. Organic psychosis. Psychosomatics 1988;29:16–36.
18. Capgras J, Reboul-Lachaux J. L'illusion des 'sosies' dans un délire systématisé chronique. Bulletin de la Société Clinique Médecine Mentale 1923;11:6–16.
19. Silva JA, Leong GB, Shaner AL. A classification system for misidentification syndromes. Psychopathology 1990;18:27–32.
20. Silva JA, Leong GB, Miller AL. Delusional misidentification syndromes: drug treatment options. CNS Drugs 1996;5:89–102.
21. Signer SF. Capgras' syndrome: the delusion of substitution. J Clin Psychiatry 1987;48:147–50.
22. Silva JA, Leong GB. The relation of Cotard's syndrome to delusional misidentification. Israel Journal of Psychiatry and Related Sciences 1996;33:188–93.
23. Feinberg TE, Shapiro RM. Misidentification-reduplication and the right hemisphere. Neuropsychiatry, Neuropsychology and Behavioral Neurology 1984;2:39–48.
24. Hirstein W, Ramachandran VS. Capgras syndrome: a novel probe for understanding the neural representation of identity and familiar persons. Proceedings of the Royal Society of London B 1997;264:137–44.

Additional information and reprint requests:
J. Arturo Silva, M.D.
P.O Box 20928
San Jose, CA 95160