Morning Glory Seed Psychosis

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IN ALMOST every culture known to man, intoxicating and mind-altering substances have been used for producing pleasure or for alleviating anxiety or pain. The earliest records of historians make reference to the consumption of wine or beer. Noah's first act on leaving the Ark was the planting of a grape vine. The Greeks and Romans conducted ceremonies honoring their gods of wine, Dionysus and Bacchus, characterized by wild dancing, singing, and drinking to the point of oblivion. As other civilizations emerged, the variety of intoxicating beverages increased. As early as the Assyrians, opium was used medicinally. Its use spread to India and China, where the pleasurable side effects were recognized.

Since these early times, man has looked for different means of producing pleasure and relieving his anxieties. Recently, it has been discovered that the seeds of the common, garden varieties of morning glory flower, *Rivea corymbosa* and *Impomea violacea*, have the capacity to alter the state of consciousness and other mental processes. The identity of the substances in the seeds which are responsible for their action is unknown. However, it is known [1] that the related wild tropical variety of morning glory has seeds which contain chemicals similar to lysergic acid diethylamide (LSD-25), such as d-lysergic acid amide, d-iso-lysergic acid amide, and others.

The discovery of the narcotic effect of morning glory seeds has dangerous implications. Morning glory seeds are readily available and inexpensive. Moreover, their possession and use is not prohibited by law. Unfortunately, knowledge of the effects of ingesting the seeds is more widespread among persons apt to misuse them than among responsible investigators and clinicians.

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To date there have been only two cases reported concerning the effects of morning glory seed intoxication [2,3] and these reports have emphasized the physical changes and reactions rather than the psychical ones.

In this paper, we propose to present three additional case histories of psychosis due to morning glory seeds and suggest psychodynamic formulations to explain the psychosis and the attraction that the seeds have for some people. We will cite as pertinent, evidence suggesting that the pernicious effects of the use of these seeds on ego function is prolonged, producing a peculiar state characterized by impairment of the synthetic capacities of the ego instead of those ego functions (such as memory, intellect, and orientation) typically damaged in organic conditions.

Report of Cases

CASE 1.—This patient is a 24-year-old, single, white man who comes from a disturbed home environment. His mother is cold, domineering, and hostile, whereas his father is weak and ineffectual. He has two older, married sisters who are said to be in good mental health.

At the age of 8, school authorities recommended a psychiatric evaluation of the patient because of motor hyperactivity, distractibility, and poor school work despite a high level of intelligence. His parents were offended and angered by this recommendation and did not follow it.

During the patient's developmental years, very little emphasis was placed on impulse control. There was excessive sexual stimulation in the home. At age 16, he attempted to rape one of his sisters. His parents appeared unconcerned other than fearing social stigma. However, they did seek a psychiatric examination of their son when he was 23 years old, after they discovered that he was taking drugs, including amphetamine, cough syrup containing codeine, phenothiazines, and marijuana. They feared his arrest would bring embarrassment to the family.

At the time of the initial interview, the patient had been unemployed for about one year. He had been discharged from the army as an undesirable after he grew a bushy moustache and long hair in a feminine style. He spent each night in a local park in the company of a group of beatniks, taking drugs and having lengthy discussions about the state of

the world, philosophy, literature, and similar subjects. Since he spent most of the night in this way, he slept in the daytime and resisted all efforts of his parents to make him work.

Because his parents, with whom he lived, refused to give him spending money, he panhandled money from a group of high school girls. They thought he was "cute" because he entertained them by acting the clown. He also stole money from newspaper boxes in order to pay for his drugs. He showed neither guilt nor shame, and only feared that he might be homosexual because of persistent fellatio fantasies. Although the idea was consciously repelling, he considered submitting to fellatio in order to get money for drugs. He insisted, however, that he would never take the active role.

This patient first learned of the hallucinogenic effects of morning glory seed ingestion through a newspaper article cautioning against the use of the seeds. He first tried the Heavenly Blue variety (*Rivea corymbosa*), but later preferred the Pearly Gates variety (*Impomea violacea*) because they provided more dramatic effects. After finding that four ingestions (using approximately 200 to 300 seeds) did not produce a "high" quickly enough, he prepared an injectable dose. By boiling 200 seeds in water, he developed a brown, oily fluid containing many small particles. Using a 10 cc syringe, he drew the fluid up through a wad of cotton which he used as a filter. Frightened by the appearance of the liquid, he used only 0.5 cc instead of the 10 cc he had originally intended.

The results were dramatic. Within seconds he was stiffened and "jolted back" in his chair. He experienced a feeling of "nothingness" and "negate thought." He repeatedly asked himself, "Am I high?," but could not decide. He became fascinated with his bodily movements and desired to move very slowly, imagining himself doing a primitive African tribal dance. There seemed to be "more substance" to his head than to the rest of his body, and his head seemed detached from his shoulders. He moved the rest of his body carefully under his head to prevent it from falling on the floor.

He said he felt "very human," ie, no longer estranged from others; "very compassionate," ie, optimistic and loving everyone and everything. About ten minutes after injection of the solution, he developed a "catatonic feeling" and desired to remain completely still. He felt pain if he moved rapidly. While in this state he noticed that shadows on a marble wall about 60 feet away seemed to be "undulating" or "creeping across the wall."

He thought that he could make a darkened doorway light up as if a searchlight had been turned on it, and he began to experiment with this, believing himself to be very powerful. Within a few moments, the light fixtures in the ceiling and one end of a balcony began to droop. He could make them bend but only to a certain point, after which they reassumed their "reality positions."

During this time, he was not frightened because he knew that the changes in perception and sensation were not real and would not occur unless he made himself "receptive" to them. One half hour after the injection, he suddenly developed nausea, vomiting, diarrhea, and chills. He craved sugar, and obtained a soft drink which nauseated him. He was unable to see clearly. Subsequently, he developed frank shock with a drop in blood pressure to 60/40 mm Hg.

He was taken to an accident ward. After supportive treatment for shock, his condition improved promptly, except for blurring of vision, which persisted for several hours.

One month later the patient reported that the perceptual distortions recurred when he was fatigued or distracted. He believed he had permanently damaged his brain. Four months following the original injection, the patient reported that he was powerfully attracted to the drug, that the sensations could be made to return at will, that at times the sensations returned against his will, and that despite this, he planned to continue the use of psychotomimetic drugs.

CASE 2.—This patient is a 21-year-old Jewish honor student who comes from a family lacking warmth. His father is a retired factory worker who always worked diligently and seemed to be a determined and domineering person. His mother is frequently ill and suffered a stroke two years prior to the patient's admission. He has a 24-year-old sister.

The patient is described as being extremely studious. His parents continually stressed the value of education and the receiving of a college degree. Because funds were scarce, he was encouraged to get a scholarship, which he succeeded in doing. He was accepted into Phi Beta Kappa and graduated from the university he attended magna cum laude. He has been accepted for postgraduate work at a leading university.

While in high school, he had few social activities and did not date until his senior year in college. During high school and college, silent and unsociable, his love of books served as a substitute for human relations. His parents viewed him as a timid, shy, self-conscious person who lived a seclusive, studious life.

During the year of postgraduate studies, he lived away from home, became involved with people who were taking mescaline and Heavenly Blue Morning Glory Seeds, and began to take them himself. Describing his intoxication to his sister he said, "You sure see some strange things." He felt that the police were after him and that he was "going crazy."

During the initial phase after taking the seeds, he recalled that he had experienced a hypersensitive awareness of the things around him. He said that everything looked beautiful, and he felt a "more enjoyable appreciation of aesthetics."

While under the influence of the drug, the patient began to have homosexual feelings. He worried about holding a close friend's hand and said that he felt sexually inferior. Shyness had always been

a facet of his personality, and he had once been asked by a girl if he were queer because of his severe shyness.

At times, the patient was having loose associations and became incoherent and confused. He talked in a hyperintellectual manner and tried very hard to rationalize his illness. He had auditory and visual hallucinations and felt that he had been hypnotized. His mood fluctuated markedly. He called for help from his friends who answered by stimulating further perceptual aberrations. For example, they suggested that a building looked like a cheesecake and that a person looked like a harpsicord. The patient saw spots, repeated words, and felt that his emotions were "played up." When listening to music, he had an orgasm but felt no erection. Logical thinking was impaired.

He thought that the effects had abated eight hours after ingestion. The following two days he was calm, but, on the night of the second post-ingestion day, he became restless, fearful, and believed he was going crazy. He went to a psychiatric hospital seeking admission unsuccessfully. Later, he attempted to cut his wrists and was admitted after having ingested three packages of morning glory seeds.

After admission to the hospital, the patient showed marked regression. He was in catatonic excitement and showed impulsive behavior. At times, he was assaultive, violent, and unmanageable. He hit another patient, walked into the nurses' stations, disregarded cleanliness, and did not control his bowels or bladder. He spoke of religious delusions having to do with Christ, God, and heaven. After the initial stormy period, he continued to have a marked paranoid attitude. He became very introspective, ruminating about, and describing his experiences during the acute intoxication. He improved with chlorpromazine and after three months was discharged to continue his studies. It was felt that he had regained his premorbid state.

CASE 3.—This 17-year-old high school student lived with his mother, younger sister, and grandmother. His parents had separated when he was 4, and he had no meaningful masculine contacts. Early in adolescence, he had shown mild trends toward psychopathy, such as drinking and poor school grades. He complained recurrently of depressions. In the past two years, he had given up drinking alcohol and cough syrups with codeine. His social life and school work were said to have improved.

The patient had ingested three packages of morning glory seeeds after two friends described to him the effects of ingesting one pack of seeds. His friends had read of the effects of the seeds in a book that is popular and well known among adolescents.[4]

He became intensely nauseated and later had a bout of severe diarrhea. He felt numb, unable to respond, and gradually sank into an unresponsive stupor. When his family found him, they called the family physician whose examination of the boy three to four hours after the ingestion of the seeds found him to be essentially within normal limits, except for dilated pupils and flushed face. A presumptive diagnosis of acute schizophrenic reaction, catatonic type, was made, and the patient was referred to a psychiatric hospital on the following day. Before hospitalization was effected, he wandered away, returned hours later, and related that he had gone to visit a friend but was unable to recall details.

On admission, the patient was noted to be pleasant and cooperative. Affect was appropriate and thinking processes were intact. There was no evidence of psychosis, but he complained of recurrent depression. A presumptive diagnosis of morning glory seed intoxication was made. Physical examination and routine laboratory studies were within normal limits. Psychological testing 24 hours later revealed no evidence of psychosis. Throughout the projective testing, there was evidence of much oral dependency with tendencies toward depression.

The patient gave a very clear and vivid description of his experience during the drug intoxication. He felt intensely anxious, then giddy, and finally sublimely peaceful. The usual perceptual disorganizations were noted, eg, "The wall was broken up like a venetian blind with slats that moved up and down. I could look at a lamp and it would float in the air." This did not create anxiety because the patient felt that he could control the perceptual changes. He described a sense of vibration in which he felt that everything within his skin was shaking in a very frightening manner. However, this was followed by numbness, then exhilaration, and then a feeling of intense peacefulness.

Comment

Certain main themes appear from these seemingly heterogeneous cases when they are considered from the standpoint of psychoanalytic structural theory.

For the sake of convenience, we will divide our discussion into the categories of id aspects, ego aspects, and superego aspects.

Id Aspects.—That there is great libidinal satisfaction in the taking of these substances is illustrated by their repetitive use, their capacity for substitution for opiates and alcohol, and the expression of immediate gratification as well as continuig preoccupation with the experience.

The experience is a peculiar, paradoxical, and unique one. The patients have described simultaneous peacefulness and excitement. The hyperacuity of perception is described as uncanny and other-worldly, but is experienced pleasurably rather than fearfully. This combination of moods is not found by

taking either opiates or alcohol. In the former there is experienced a peaceful, tranquil, regression, whereas the latter shows a variety of responses, dependent mainly upon the premorbid personality.

All three cases illustrate derivatives of oral fixations. Case 1 illustrates orality as seen in an addict. The history shows that he is attracted to the oral ingestion of a variety of agents. His sexual fantasies are in the oral mode. His relationships are characterized by feelings of lack of satiation together with an infantile omnipotent expectation of acceptance by others. The lack of maternal warmth and affection in the history of case 2 led to the development of a schizoid obsessional character structure which served as a defense against the underlying oral cravings uncovered in the psychosis. Case 3 illustrates the orality of the passive-dependent personality, as seen in his use of alcohol, cough syrup, and drugs, and in the maintenance of his dependence on the three maternal figures in his home.

It is further felt that one aspect of the libidinal satisfaction is in oral satiation. The described feelings of expansive union with others and euphoria, as well as some aspects of the perceptual changes appear akin to the oceanic feelings as described by Freud in *Civilization and Its Discontents*. The wavy perceptions, such as shadows undulating across the wall of case 1 remind us of those phenomena described by Isakower.

A variety of homosexual derivatives is illustrated by our material. In case 1, mixed sexual identifications are evidenced by the long hairdo, thoughts of fellatio, and conscious fears of being "queer." Under the impact of the psychosis, patient 2 experienced homosexual preoccupation during the acute phase and later regressed to paranoid defenses, whereas premorbidly, he was able to remain compensated by development of a schizoid personality, withdrawal, studiousness, and sexual inhibitions. The patient in case 3 attempted to refute his feminine identification in adolescence by delinquent behavior, identification with a male group, and the taking of the morning glory seeds.

Ego Aspects.—The disruption of ego boundaries and the inability of already disturbed persons to later reintegrate their ego functions is demonstrated in the three case histories outlined in this paper. Each of these patients was marginally adjusted prior to ingestion of the drugs. The patient in case 2 was known to have been a schizoid personality with a presumed strong latent homosexual drive. The ingestion of the drug brought out much of the homosexual fear and religious preoccupation which he had been able to defend against prior to the intoxication period. As the defenses failed, he rapidly regressed to catatonic excitement.

What is observed in all three cases is an alteration of many of the ego functions. Those more easily observed function, such as perception and control of motility, have been described by others and are demonstrated in our cases. The more abstract functions, such as integration and synthesis, are likewise affected, but their alteration may be extremely subtle. Ludwig and Levine [5] state briefly, "generally the more serious effects, such as homosexual acting out, withdrawal, and paranoia cleared when the influence of the drugs was over. There were several reports of people going insane after prolonged hallucinogenic drug usage, but these people were reported to be weird even before they started on the drug." Although the majority of observable alterations may indeed disappear after the drug effect is over, the long-term effect on ego integration among various systems (id, ego, superego) and among the separate ego functions may not be discernible without detailed clinical study. As Nunberg states, "The synthetic function of the ego manifests itself in the assimilation of internal and external elements, in reconciling conflicting ideas, in uniting contrasts, and in activating mental creativity." [6] In these patients, perception was split off from smooth harmony with other ego functions and became hypercathected, as seen in the enjoyment of, playing with, and wishing to return to drug induced perceptual changes. Patient 1 was unable to unite the paradoxical attitudes toward the drug. Although he feared it, he desired and sought the drug. Patient 2 could not integrate ego functions, such as logical thinking and control of motility. All

the patients showed massive regression with its concomitant breakdown in synthetic functions followed by a restitutive reintegration at a lower level of functioning. Months later, the patients were still showing effects of the drug experience and were not fully returned to their premorbid state.

The question of permanent brain damage as a result of the ingestion of these drugs has been raised [7] and deserves investigation. In these cases, there is no evidence of impairment of memory, intellect, or orientation. Moreover, confusion was not manifest after the period of the acute intoxication. Gross impairment of insight and judgment, as seen in organic brain disease, was absent. The alteration of perception, in itself, is insufficient evidence of organic brain disease.

The effect of repeated use of these substances may cause a looseness of association which is rationalized as a hyperperceptivity and increased awareness of things in an intellectual individual. We feel that this should be a consideration for those who work with these drugs. Other effects of disturbed ego functions are depersonalization and derealization, distortion of body images, alteration of time sense, and impaired thinking and concentration ability.

A striking ego gratification is noted in the patient's feeling of mastery over the perceptual changes. The experience of this as a form of play can be particularly appealing to those with already weakened egos. This would be illustrated in adolescents who are experiencing a flood of instinctual tensions. Thus, the ingestion of the drug may act as an ego defense.

Superego Aspects.—The willingness of a person to take drugs may represent a defect of superego functioning in itself. The rigid, primitive superego of the patient described in case 2 was overthrown in the act of taking the drug. The patients described in case 1 and case 3 show tendencies toward delinquency.

During the acute psychotic phase, the superego function may be increased or decreased. The withdrawal into catatonia and stupor may represent a primitive attempt to avoid action. In other cases there is complete lack of restraint.

Superego regression is seen in those patients who regress to a paranoid state, either during the acute or chronic phase of the drug experience. We recognize that ideas of reference and persecutory delusions represent derivatives of superego regression as well as disturbances of ego function.

Immediate problems which the use of these substances pose are differential diagnosis and prognosis. As can be seen from our cases, the differential diagnosis from schizophrenia is often most difficult. In addition, other forms of intoxication must be differentiated.

Summary

Three cases of psychosis following the ingestion of morning glory seeds have been presented in this paper. The similarity of these reactions to those following the ingestion of lysergic acid diethylamide (LSD-25) has been noted and related to the fact that morning glory seeds contain chemically related substances.

We have reviewed our findings in relation to the structural theory, indicating changes seen in id, ego, and superego functioning. Our findings indicate that these drugs have their most marked action upon the synthetic function of the ego and that the long lasting effects appear due to disturbances in this group of ego functions rather than organic changes.

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