Original Articles

Chronic Psychosis Associated With Long-Term Psychotomimetic Drug Abuse

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THE uses and abuses of the principal psychotomimetic drugs have been of increasing interest to mental health workers for approximately the past decade. Numerous articles have dealt with the consequences of ingestion, both in and out of supervised therapeutic settings. The production of prolonged adverse effects, including extended psychotic states, has been of particular significance and concern. Acute psychoses triggered by psychotomimetic drugs frequently run a course indistinguishable from acute psychoses unrelated to drug use. Such drug-induced psychotic states are characterized by a relatively well-demarcated onset of the psychosis, and tend to occur in individuals with "poor premorbid" developmental histories. In recent years we have noted increasingly that psychotic patients come to our attention where no clearly defined acute episode can be specified, but who have allegedly used large doses of psychotomimetic substances over extended periods of time. We report here four such cases, in which certain similarities were apparent in the areas of premorbid family relationships, reasons for beginning use of drugs, the presenting clinical picture, hospital course, and response to treatment. The precise nature of this syndrome is as yet unclear, but the protracted use of very large quantities of lysergic acid diethylamide (LSD) or similar compounds appears to be an important, if not decisive, factor in its genesis and outcome.

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Report of Cases

CASE 1.—A 22-year-old white man was hospitalized at his parents' insistence because of increasing withdrawal and social isolation. The history included evidence of more than 150 LSD ingestions over a two-year period. He was the middle child and only son of an upper-middle-class, status conscious family. The father was a strict, rigid man, who spent months at a time away from home in the course of his employment. The mother, who drank heavily, had been largely responsible for the rearing and discipline of the children. The parents appeared unhappy with the marriage, felt there was little communication between themselves, and questioned openly the value of their social and financial success while they continued to pursue it. During childhood and early adolescence, psychopathological traits were not apparent in this young man. He did average work in school (though below his potential) and had a number of close peer relations including several steady girl friends. He attended boarding school at age 14 and apparently managed this transition from home successfully for one year. He began to use marihuana occasionally at age 16 and LSD infrequently at age 18. After dropping out of his first year of college he went to San Francisco with a girl friend whom he impregnated within six months. While trying to reach a decision about marriage he began to use LSD almost daily, allegedly taking over 75 doses in four months. He did not marry the girl

who subsequently left him and placed the child for adoption. The patient then returned home where his family found his "hippie" appearance, his passive withdrawn manner, and his bizarre speech in sharp contrast to his previous personality. Despite the fact that he had not used any drugs except marihuana for six months, the family insisted on hospitalization because of the personality change. On admission he had shoulder-length hair, a saddened, aged face, and appeared underweight. He avoided meaningful interaction in a stereotyped manner. He would sit passively and occasionally raise his hands, saying such things as, "Don't hassle me," or "It's a groove." His affect was flat and bland. Word associations were not loose but revolved around a philosophical belief in eastern religions, LSD experiences, and himself as the passive agent for whom things were cosmically determined. Strong denial and projective mechanisms were apparent in his thinking although occasionally he was aware that his paranoid ideas were related to internal feelings, particularly guilt. He also experienced feelings of depersonalization and visual hallucinations. Orientation was accurate and his memory for recent events was good, but recall for past events seemed vague. An electroencephalogram was read as normal. The working clinical diagnosis was chronic undifferentiated schizophrenia, and the patient was hospitalized for four months while being seen in individual and group psychotherapy. He was placed on large doses of chlorpromazine (900 mg a day) which had some calming effect but did not alter his basic manner of thinking. The passive style, preoccupation with eastern religious fatalism, and avoidance of social interaction persisted. He continued to keep his outpatient appointments and take psychotropic medication, although his mental status remained unchanged.

CASE 2.—A 21-year-old white man, whose prior history included 200 to 300 LSD ingestions, was hospitalized for increasing isolation and withdrawal. He was the only son and oldest child of middle-class parents. The father, a successful businessman, seemed quite distant and uninvolved with the family; the mother was described as emotional but very easygoing. The marriage had apparently been unhappy, and there was little communication between the parents who, because of their own differences, were unable to set limits for the children. There was no evidence of serious psychopathology in this individual through elementary and high school. His academic performance was fair and his social development appeared normal. His first heterosexual experience occurred at age 16 without major overt conflict. He worked successfully away from home for a summer at age 17, and entered college the following fall. During his second year of college he became personally acquainted with a popular psychedelic drug enthusiast and began to use LSD occasionally. In the spring of that year, he impregnated a girl friend, began to use LSD almost daily, and eventually dropped out of school. He was unable to reach a decision about marriage and went to live with friends in Greenwich Village. During the next nine months he worked in a psychedelic theater, and allegedly took over 200 LSD "trips." Although he remained in contact with the girl and child, his feelings about marriage remained unresolved. On a visit home, his parents noted that he was acting and dressing in a bizarre fashion and insisted on his hospitalization. On admission, he was dressed in Chinese robes, wore shoulder-length hair and a beard, and appeared grossly underweight. He avoided interactions in a stereotyped manner but would sit passively with his chin in his hand and answer in a rambling, wandering manner which appeared directionless. His affect was shallow; word associations were loose, vague, and circumstantial. His thoughts revolved around his being manipulated by cosmic or religious forces. Massive projection was apparent in the form of persecutory delusions and bizarre ideas of reference. He was well-oriented, had good recent memory, but imprecise recall of the past. Proverbs were interpreted in a highly personalized way and there were visual hallucinations. The electroencephalogram (while he was taking phenothiazines) was read as "borderline abnormal." The clinical diagnosis was chronic undifferentiated schizophrenia, and the patient was hospitalized for ten weeks and treated with thioridazine hydrochloride (Mellaril, 800 mg a day), 20 electric convulsive treatments, and individual therapy. Nevertheless, his passivity and mode of interaction by verbal distancing made therapeutic engagement extremely difficult. His style of thought including the use of projection and delusional ideas remained unchanged, and he eventually requested transfer to a state hospital for long-term care.

CASE 3.—A 20-year-old white man was hospitalized by his parents when they became alarmed by his unusual speech and behavior. He reported the ingestion of LSD more than 50 times over the preceding 18 months. This patient was the youngest of two children and the only son of an upper-middle-class family. The father, a strict and inflexible authority figure, was described as uninvolved with the children. The mother was kind and permissive, but was seen by the other family members as a fragile

person, and there had been a great deal of conflict between the parents about the discipline of the children. This young man's development through his entrance to college showed no clear-cut evidence of psychopathology. He did average academic work, had a number of close male peers and many girl friends. He appeared to have separated himself successfully from the family when he left home to attend college where he did quite well academically until the end of the first year. He then impregnated a girl friend, and while contemplating marriage began to use LSD heavily. He did not marry the girl, the child was placed for adoption, and the patient dropped out of college. During the next year he reportedly took LSD over 50 times and held a number of jobs for brief periods. He then settled in a hippie commune where for six months he took no drugs except marihuana. On a visit home his parents became concerned because of his disorganized speech, withdrawal, and bizarre dress. On admission to the hospital his shoulder-length hair was encircled by an Indian headband; he appeared older than his age, underweight, and strangely clad. Avoiding any meaningful interaction, he would sit passively while examining questions in minute detail, posing further questions so that the point was usually lost. His affect was shallow and flat, associations circumstantial and vague, while thinking centered around a desire to love and fuse with others which he phrased in mystical terms. Recent memory was good, past memory poor, and orientation was intact. The patient admitted to feelings of depersonalization, interpreted proverbs in a very personalized way, and denied hallucinations. The working clinical diagnosis was chronic undifferentiated schizophrenia. After two weeks of hospitalization he escaped from the hospital. Phenothiazines had not been used, but an attempt was made to engage him in individual psychotherapy. However, the therapist experienced great difficulty in involving the patient in any meaningful manner, due to the overwhelming passivity, tangential style of interaction, and the persistence of delusions.

CASE 4.—A 21-year-old white man was admitted at the insistence of his wife and her parents because of increasing isolation and withdrawal. The history included over 250 LSD ingestions during the prior two-year period. The patient was the oldest of two boys in a lower-class family. The father, a strict, distant, "disappointed person," drank heavily. The mother, described in idealized terms, had died when the patient was 7 years old. He was then raised by the maternal grandmother, and would see his father only for severe disciplining. Despite his mother's death, his development through high school showed no evidence of psychopathological traits. He had had both male and female friends, did average academic work, and was active in sports. After high school, he worked for one year in a factory and subsequently attended college. During his first year there, he began to take LSD and ultimately dropped out of school. Over the next two years, he continued taking drugs while roaming aimlessly around the country. He traveled with a girl for some time and finally married her, despite the objections of her family. She and her parents encouraged him to settle down, accept marital responsibility, and obtain employment. Within two months he had left his job, withdrawn into meditation, developed paranoid delusions about his wife, and was eventually hospitalized. On admission, he had long hair, a sad, unshaven face, and appeared older than his age. He interacted in a teasing, evasive, and circumstantial manner which made clinical evaluation difficult. His affect was flattened but appropriate, his mood mildly depressed. Associations were not loose, although thinking was rambling, tangential, and evasive. His thought content centered on an interest in eastern religions in which one could meditate to reach Nirvana where "all things are one." Thought processes were characterized by projection, denial, and paranoid delusions. He also complained of feelings of depersonalization and of auditory hypersensitivity. His recent memory was good, past memory vague, and proverbs were interpreted in a personalized fashion. An electroencephalogram was reported as normal. The working diagnosis was chronic undifferentiated schizophrenia. Phenothiazines were tried with little beneficial effect. The therapist attempted to involve the patient in group and individual psychotherapy but felt the patient was extremely difficult to engage. Although he was calmer at the time of discharge six months later, there was no essential change in his mode of thought and style of interaction. His passive approach to life, evasive manner of speaking, and interest in eastern religions and psychedelic drugs persisted, and he terminated outpatient therapy after three weeks.

Comment

The major psychedelic drugs have both long- and short-term adverse effects.[1-11] Whereas short-term effects are more commonly seen and frequently quite dramatic, prolonged adverse effects may be of graver significance for the individual patient.[1-4]

The exact nature and extent of such long-term morbidity secondary to use of psychotomimetic compounds is uncertain. Further, it is as yet unclear what personality factors lead to and perpetuate heavy drug use, nor has it been determined precisely what historical and environmental events are relevant to the production of chronic adverse effects.[3,12-14] The literature divides the harmful side effects generally into acute and chronic categories. Acute reactions are characterized by severe panic, often phenomenologically similar to psychosis but of relatively brief duration.[1] Prolonged effects include recurrence of drug-related symptoms, often at times of stress (feelings of depersonalization, hallucinations, "flashbacks"); extended periods of depression; release of preexisting asocial trends; or extended psychosis.[1-3]

In contrast to the rather characteristic acute psychoses which can be triggered by drugs, the patients described here presented a uniquely chronic clinical picture. Rather than triggering a well-defined episode, in these instances psychotomimetic drugs appear to have played a more complex and protracted role in the production of the eventual psychosis. We have been impressed with the effect heavy long-term drug use (the periodic production of a uniquely altered state of consciousness) may have had upon the resolution of crucial maturational conflicts and the production of a less internally conflicted chronic psychotic state. Certain aspects of this syndrome require further comment.

With regard to premorbid status, the development of the patients described here was characterized by the attainment of the usual adolescent milestones and the absence of marked schizoid or sociopathic traits. All had had close male friends and had successfully maintained early heterosexual relationships. These peer involvements often continued throughout the psychosis and during hospitalization. Each patient had done adequate work in school and had apparently begun to achieve separation from their families of origin prior to the onset of heavy drug use and psychosis. The absence of marked premorbid acting out or isolation, even at times of stress, such as separation from the family, is in contrast to sociopathic or schizoid traits which have been reported to characterize the early histories of many schizophrenic individuals.[15]

The family structure and roles of parents were similar in each instance. While the families of three were financially and socially successful, they appeared disappointed with their success. Despite this disillusionment, they pushed their children to maintain similar values. The fathers were distant, strict, and rigid, and seemed to avoid the development of close ties with their sons. The fathers' apparent "disappointment" in life made it even more difficult for the son to know him as a role model. The mothers were usually seen by their respective family groups as easygoing, passive, but controlling individuals who had been the primary parent responsible for child rearing. Limit setting was a problem, since the mothers were easily manipulated or would undermine the father's authority and the son's attempts at identification with him.

With regard to onset of drug use, it is striking that all of these young men began their frequent use of psychedelic drugs at the time they were faced with the task of resolving certain crucial maturational issues, and the onset of personality change can probably be traced to this period. All had made occasional use of psychotomimetic drugs before this time, but there had apparently been no long-standing ill effects. The accidental impregnation of a girl friend involved three of the four patients in the crucial decision whether or not to accept the responsibility of marriage and parenthood. The crucial maturational issue for the fourth patient, of lower-class origin, was whether or not to accept the responsibility of college discipline. Drug ingestion was used initially as a means to avoid confronting any of these decisions. This pattern was described by patient 1, who stated, "When I had a decision it was a drag, so I would get stoned on LSD."

Each patient reported from 50 to 250 separate ingestions of major psychedelic drugs over a period of one to three years. Although such historical data cannot be verified with complete accuracy in retrospect, supporting corroborative information was obtained from family and friends in each instance. Such frequent artificial alterations in consciousness and judgment are

likely to have affected concurrently developing attitudes and values. Specifically, each patient seemed to have become confirmed in his choice to "cop out" of the difficult maturational decisions he faced. Prolonged drug use thus fostered as a value the avoidance of affective pain and facilitated the acquisition of certain mystical beliefs.

On the basis of the mental-status examination, the clinical picture appeared to be that of a chronic schizophrenic reaction. All these individuals were withdrawn and isolated on the ward. Their affect was shallow, and thought processes, while not loose, were bizarre and centered on eastern religious mysticism. Primarily these patients utilized mechanisms of denial and projection, even to the extent of paranoid delusion formation. They were well-oriented and had good recent memory. As tested by clinical examination, there was an apparent impairment for recall of the more distant past in each instance. This observation has been made previously in a similar group of heavy drug users who were not considered psychotic.[13] All admitted to occasional illusory sensory experiences, similar to "flashbacks." The overwhelming passivity, evasive style of interaction, and peculiar manner of thinking seemed not to be a part of an acute process, but rather an integral aspect of each patient's personality. Historically this had not been so, for their personalities had allegedly been very different prior to their beginning heavy drug ingestion. In these young men the psychosis appeared chronic and egosyntonic, factors which may have contributed to its resistance to treatment.

These four patients were hospitalized for various lengths of time and received psychotherapeutic and somatic treatments. These treatment modalities had less influence on their behavior and style of thinking than we are accustomed to seeing in schizophrenia. Hospitalization per se seemed to have little effect, and these patients were as uninvolved in ward activities and the milieu after six months as they had been after two weeks. Chlorpromazine was used in moderate doses (up to 900 mg per day). The only response to this psychotropic agent was a moderate alleviation of anxiety in two of the patients. Electric convulsive treatments were used in one patient with no noticeable effect. Relatively unsuccessful attempts were made to involve these patients in individual and group psychotherapy. The therapists attributed the failure of psychotherapy to the passivity and interpersonal distance which the patients maintained. These characteristics prevented therapeutic engagement and the formation of a working therapeutic bond. To the therapists these psychoses appeared egosyntonic; there was little recognition of disability, minimal sense of inner conflict, and poor motivation for therapy. Briefly stated, these patients appeared unfortunately comfortable with their psychoses. We reemphasize that such a "process" course would not have been entirely predictable on the basis of premorbid social and developmental data.[15-18] We suggest that prolonged psychedelic drug abuse was a major factor in determining the relatively intractable final clinical picture. This pattern of drug abuse which begins as a novelty among peers, for certain individuals may become seductive and convincing as a problem-solving method, and under certain circumstances may well contribute to adverse personality change. It is well-known that LSD causes an intense amplification of affective states, both positive and negative.[13,19] It has been reported that chronic users, realizing that a "bad trip" may occur when they are in a state of unpleasant affect, will avoid situations where such feelings arise.[13] In effect, these individuals actively seek to perpetuate a state of neutral or positive affect. Ambivalent feelings which arise over crucial life decisions, such as an unplanned pregnancy and marriage, threaten their affective neutrality. The patients indicated that they took drugs when they were faced with important decisions. If on such occasions the "trip" was pleasant, the individual would repeat the drug ingestion, rather than involve himself again in the "hassle" of the decision. If it were unpleasant, he would try to avoid future situations where the same affect might be experienced. The time for decision would soon be past, and the choice would either have been resolved by their noncommitment or have been made by someone else. These individuals, through their use of drugs, had become passive bystanders at important moments of potential

growth in their own lives. Further, drugs and the attendant subculture not only provided a ready defense against unpleasant affect, but also contributed a rationale or an ideology for "dropping out." Although many pharmacologic substances may provide temporary relief from unpleasant affect, the psychotomimetic drugs may be unique in fostering in certain individuals the learning of longer-lasting attitudes with regard to striving, more consistent with eastern traditions.[12,13,20]

The extent to which avoidance behavior had become integrated into the personality styles of our patients was striking. For instance, the peculiar style of interaction of these young men can be viewed as another example of their avoidance of situations where unpleasant affect might occur. They were in fact able to interact with some people (old friends, and when conversing about drugs) but would actively and persistently avoid involvement with all others. This was done by a specific manner of verbal examining, reexamining, and questioning of all dialogue such that any point would be lost. While these patients had some friends, their main involvement with them was in meditation, shared silences, or discussions about drugs. Further, the attempt to perpetuate a conscious inner style of neutral affect was brought about not only by their passivity and style of interpersonal interaction, but also by their mode of thinking. The use of denial and projection fostered a broad alloplastic position, and their belief in eastern religious fatalism supported their notion that lives were predetermined, that they as individuals had no responsibility (nor effect upon) the outcome of events. This view was described by patient 4 when he stated that he kept himself "from being involved down there in the real world and its problems with all its hassles," by "meditating and abstracting plus one" so that he "would reach Nirvana." This meant he would "solve the problem and get into the world again through the back door" without any involvement or emotional cost.

Thus, for the patients described here, the protracted use of psychotomimetic drugs appears over time to have facilitated, sustained, and integrated into the personality an overall psychological strategy which was characterized primarily by massive avoidance of conflictional life situations, stressful interpersonal encounters, and painful affect. If successful treatment requires at some point that these individuals face sadness, frustration, and other painful emotions, we can begin to understand some of the therapeutic problems posed by patients of this type. Such a life style, to the degree reported here, is almost by definition a chronic psychotic adaptation. We suggest that this clinical syndrome is a relatively infrequent but extremely grave outcome associated with the long-term use of psychotomimetic drugs.

Several additional questions are raised in our minds by these individuals. The first relates to diagnosis or severity of illness. Blacker et al[13] reported neurophysiological studies using a very similar group of individuals whom these investigators did not regard as psychotic. Our patients, while very similar in many respects, seemed more nonfunctional and less in control of their bizarre behavior. It is in terms of inability to function that we would label our patients psychotic, rather than in terms of their overall eccentricity. A second question we are raising relates to the production of chronic psychosis by psychopharmacological agents. As noted above, psychotomimetic drugs are often thought to "precipitate" psychotic reactions in psychosis-prone individuals. It may be, however, that the protracted use of certain drugs can produce a chronic psychotic adaptation in individuals whose premorbid histories are not typical of prepsychotic individuals. This possibility strikes us as a particularly interesting and alarming one, and leaves us with the task of specifying the sequences: psychological, social, and biological, involved in such an outcome.

In this communication, we have attempted to delineate primarily a psychological process whereby prolonged psychotomimetic drug use may lead to chronic psychosis. Further investigation of this syndrome will require evaluation of the additional possibility that long-term organic changes may be produced by these compounds.[21]

Summary

We have presented four patients who were hospitalized with chronic psychotic

syndromes, and who all had allegedly used large quantities of psychotomimetic substances for extended periods of time prior to hospitalization. Although no acute psychotic episode could be identified, psychotic behavior seemed to have developed gradually over a period of time in which psychotomimetic drug use was associated with avoidance of certain maturational stresses. Several common clinical issues could be identified in this group. In these individuals, prolonged use of psychotomimetic substances, rather than precipitating an acute psychotic reaction, fostered a gradual retreat from reality and affective pain, leading to a chronic, egosyntonic psychotic syndrome which was relatively resistant to inpatient treatment.

Nonproprietary and Trade Names of Drugs

Thioridazine—*Mellaril.*
Chlorpromazine—*Thorazine.*

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