NARCO-ANALYSIS AND SUB-SHOCK INSULIN IN THE TREATMENT OF ANOREXIA NERVOSA

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An adequate plan of management for the treatment of anorexia nervosa constitutes one of the more difficult problems encountered in psychiatric practice. Where the differential diagnosis between anorexia nervosa and Simmonds' disease [1] has been made, the practical application of a successful regimen of therapy may further serve as a diagnostic agent. Aside from the laboratory studies of Fraser and Smith [2] and the metabolic studies of Small and Milhorat [3], the major contribution to the study of this subject has concentrated upon an extensive evaluation of the psychopathology and the psychodynamics of the individual case. The original description of the disease by Sir William Gull in 1868, and the clinical presentation by Sir Thomas Clifford Allbutt [4] have remained essentially unmodified. It is of significant interest that the recommendations of Allbutt for "isolation, bed-rest and feeding" in the treatment of anorexia nervosa paralleled the regimen of therapy introduced in part by Weir Mitchell in the treatment of the neuroses in general.

The accumulated evidence at the present time indicates that the majority of patients presenting the clinical syndrome of anorexia ner-

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1. Escamilla, R. F. — Anorexia nervosa or Simmonds' disease? J. Nerv. & Ment. Dis. 99:583, 1944.
2. Fraser, R., & Smith, P. H. — Simmonds' disease or panhypopituitarism (anterior): its clinical diagnosis by combined use of 2 objective tests. Quart. J. Med., 10:297, 1941.
3. Small, S. M., & Milhorat, A. T. — Anorexia nervosa: metabolism and its relation to psychopathologic reactions. Am. J. Psychiat., 100:681, 1944.
4. See quotation ref. 1.

vosa have decided structural and functional alterations associated with pronounced conflict situations and emotional problems. The demonstration in young women of excessive weight loss, change in bodily configuration without a significant loss of pubic or breast contour may well suggest the presence of anorexia nervosa, especially in the absence of any antecendent history of acute infections, hemorrhage or parturition.

The child-parent relationship has been stressed as one of the critical features of the development of this disorder by Walter, Kaufmann and Deutsch [5], Lorand [6] and Eissler [7]. A serieis of artificial terms has been created to describe the observed phenomena which singularly hinge upon purely descriptive material. Brosin [8] has stressed with reality the significance and meaning of the symptoms in anorexia nervosa. There has been a definite trend to recognize the disorder as a syndrome which may be associated with schizophrenia, the neuroses or the manic-depressive psychoses. The categorical distinction of degrees of anorexia nervosa is obviously created for psychiatric convenience. To describe the condition as an organ psychosis, Meng [9] ignores the holistic concept of personality integration. Although the descriptions of organ neuroses may explain parts of cases presented, there appears to be a variable component based upon the early training and educational achievements of the individual. In our experience, the cultural attainments and degree of Ego drives materially alter the clinical features presented.

Although it has long been recognized that the symptomatic improvement in anorexia nervosa is merely a part of the general program of therapy (Richardson [10]), the successful maintenance of rapid weight gain serves to establish the initial steps in psychotherapy. There has been considerable doubt whether the use of any single vehicle has successfully solved the problem to date.

The program of treatment recommended is based upon a rapid evaluation of conflict material through the use of sodium amytal intravenously. In both cases reported, insulin was administered in the mornings prior to the narco-analysis and no interference was noted

5. Walter, J. V., Kaufmann, H. R., & Deutsch, F. — Anorexia nervosa: a psychosomatic entity. Psychosom. Med., 2:3, 1940.

6. Lorand, Sandor — Anorexia nervosa, report of case. Psychosom. Med., 5:282, 1943.

7. Eissler, K. R. — Some psychiatric aspects of anorexia nervosa, demonstrated by case report. Psychoanalyt. Rev., 30:121, 1943.

8. Brosin, H. W., Palmer, W. L., & Slight, D. — Anorexia nervosa, study of 24 cases. Read at Am. Psychiat. Ass'n. Conv., May, 1939.

9. Meng, H. — Das Problem der Organpsychose. Int. Z. Psychoan., 20:439, 1934.

10. Richardson, H. B. — Simmonds' disease and anorexia nervosa. Arch. Int. Med., 63:1, 1939.

The initial dose of insulin was 5 units and the dosage was gradually increased to 25 units one-half hour before breakfast and 10 units were given before lunch and dinner. Gavage was used twice daily for two weeks in order to overcome the early phase of acute dehydration. Significant gains in weight were noted following adequate catharsis under sodium amytal. It has become increasingly clear that cases revealing a strong resistance to narco-analysis reveal a slower type of improvement. This is well demonstrated in the second case and may confirm the impression of a rigid structural crystallization of personality. These findings resemble to a degree the observations of Clark et al. [11].

The psychodynamic mechanisms showed definite similarities in the trend of thought. However, the differences point to variables associated with religious, sociological and intellectual attainments. The conscious vehement denial of food was basically used as an expression of guilt feelings and feelings of inferiority. Both cases showed a denial of adult responsibilities and adult sexuality related to a vague type of immature infantile revenge mechanism directed toward a parent and a husband in the case of A. K., and toward the mother in the case of E. W. The conscious display of affection toward the parent is a mask of the fundamental hostility. Under narco-analysis, this affection and oversolicitousness is utilized to rationalize the rejection of food. Observations of frank hostility have been rarely observed consciously. Under sodium amytal dissociative phenomena indicate a strong schizoid trend as revealed by L. W. This has not been observed in the psychoneuroses under amytal, except with the use of positive suggestion.

The interpretation of menstrual cessation varies in the conscious and subconscious rationalization. Consciously, the patient A. K. revealed concern, worry, fear of loss of "femininity" and a loss of female attributes. The schizoid response of L. W. was characterized by little concern, a mild display of interest and a superficial demonstration of anxiety. With sodium amytal, both patients revealed little concern or apprehension over the disappearance of the menses. However, there was no evidence to indicate that there was a volitional component in the elimination of menses. Despite this, neither case interpreted the amenorrhea as permanent impregnation. Suggestion of this possibility elicited laughter in A. K. and amused resignation in L. W. The analytic interpretation of Oedipal guilt under these circumstances appears to be open to revision in view of the lack of substantiation under narco-analysis. Both cases revealed the use of revenge and attention me-

11. Clark, R. A., Kiefer, R. H., & Gerson, M. J. — Correlation of the results of sodium amytal narcosis and of convulsive shock treatment. Am. J. Psychiat., **101**:801, 1945.

chanisms and the elaboration of guilt feelings with subsequent self-punishment of an expiatory nature. This conforms wnith the classical analytic interpretation of the guilt and remorse principle.

Therapeutic Program. — In view of the importance of food as an instrument of love and punishment, the early establishment of adequate food intake is the initial focus of the patients' attention. The discussion of the subject should be relegated to a later phase of the psychotherapeutic program and the early interviews should accentuate reeducational and avocational interest. Glucose tolerance tests, hormonal assays, x-rays of the skull and chest are explained as routine preliminary tests, The use of insulin is exposed only as a tonic medication while sodium amytal is used on the basis of rest and relaxation. Gavage is explained as a means of supplying fluids to the body. No emphasis should be placed in the plan of "weighing" but should be made a part of the general ward program so that the patient is one of many patients. This serves to eliminate body weight as a topic of conversation and does not focus attention to a subject which is a point of considerable distress to the patient, family and to many physicians.

The insulin is administered daily before each meal with the largest dose given one-half hour before breakfast. The maximum morning dose was 25 units and the afternoon and evening doses were 10 units. Bed-rest was not recommended as a part of therapy for these patients, except for the first hospital day during which many of the laboratory examinations are performed. Examination of the blood glucose may be performed to evaluate the progressive alterations present. Early insulin shock is avoided and diaphoresis is an indicator for serving breakfast. Withholding food further may produce mydriatic effects, diaphoresis, slight muscular twitching and sensations of weakness. Apparently there is an initial sedative effect of the insulin which is followed by a mild stimulatory action. The initial dosage of 5 units may be increased by 3 to 5 units, depending directly upon the blood glucose and the state of debility of the patient. The anorexia does not disappear promptly but may be markedly alterad in the course of the narco-analysis, to be replaced by a voracious appetite. The effects may also be observed shortly after the appearance of relaxation and verbal catharsis.

The sodium amytal was used by way of the intravenous route in accordance with the recommendations of Lorenz et al. [12] and Grinker and Spiegel [13]. The interviews were planned and scheduled with the

12. Lonrenz, W. F., Reese, H. H., & Washburne, A. C. — Physiological observations during intravenous sodium amytal medications. Am. J. Psychiat. 13:1205, 1934.

13. Grinker, R. R., & Spiegel, J. P. — War neuroses in North Africa. New York, Josiah Macy, Jr. Foundation, 1943.

patient following the initial explanation of the relaxing effects which would be produced by the medication. No direct explanation of the psychotherapy employed was mentioned until adequate rapport was established. The recollection of the interviews was generally vague and the conscious discussion of the psychopathologic material was carried out following the first five interviews.

CASE 1. — Mrs. A. K., 28 years old, married white woman. Secretary. Mrs. A. K. was admitted with a history dating back to 1932, at which time she weighed 155 pounds. She complained of obesity and lost 15 pounds by dieting. Anorexia developed and she complained of tachycardia, nervousness and weakness. These complaints continued under medical care and her body weight decreased to 100 pounds. Nausea was present and she took liquid nourishment only. In the interim (1936) endocrine medications were given, with slight improvement. In 1936 she weighed 120 pounds. She maintained her weight of 120 pounds until 1941, at which time anorexia, weight loss, abdominal pains and nausea were noted. The menses became irregular and ceased in April 1943. She was hospitalized for three weeks, gained a slight amount of weight, but the weight gain disappeared after her return home. She was again hospitalized in December 1943, at which time she received small doses of insulin for six weeks. Despite this, she did not gain any weight, and she varied between 80 and 90 pounds during this period. In October 1944, the patient complained of vomiting and hematemesis after eating. Hospitalization revealed nervous regurgitation with self-induced bleeding. Gastroscopy revealed no gastric bleeding points. E.N.T. were negative and G.I. series were unremarkable. Despite this, the symptoms continued and in November 1944, a "peptic ulcer" was described by x-ray examination. In December 1944, surgical exploration was performed an "a partial repair of the ulcerated area was performed" (gastroenterostomy?). The patient became progressively worse, revealing increasing irritability and nervousness and her weight declined to 78 pounds.

Personal History. — The patient was delivered by cesarean section. She walked and talked at the average age. At the age of 4, she presented onychophagia and was described as being the center of attraction in her home. She attended grade school, and at the time of puberty a distinct personality change occurred. She became selfish, stubborn, disobedient and began to show marked interest in her appearance and clothes. At the age of 15, she began to have dates with members of the opposite sex. Menses began at 13, were regular until two years when they ceased. She was married at 19 and marital relations were not satisfactory. The patient had a fear of pregnancy and contraceptive measures were used. She resided in the home of her parents and continued with her narcissistic tendencies. The patient is one of two siblings. Her younger sister was described as a "neurotic individual." The father is 60, and has had surgical intervention because of a coronary artery disease. Her mother is 53 and is described as a "nervous individual."

Physical examination showed a small, thin, white woman, who appeared emaciated. The body and limbs were very thin but the breast tissue was well preserved. Axillary and pubic hair were present. The heart and lungs were normal. In spite of the severe undernutrition, there were no abnormal findings. Temperature on admission was 98.6, the pulse 80 and respirations 20. Blood pressure was 115/60. She weighed 78 pounds. The laboratory findings, including vaginal smear, urine, blood count and serological tests, were all normal. Basal

metabolism was minus 4%. EKG showed "QRS complex of low amplitude which sugests the possibility of a nutritional disorder of the heart muscle. No definite indication of a myocardial abnormality." EEG showed no specific or focal abnormality. X-rays of the skull and chest were negative.

On admission, Mrs. A. K. was somewhat uncooperative to care and demanded much attention, but she became gradually cooperative to medical care and adjusted herself to her residence. The stream of mental activity was relevant and coherent, and the psychomotor activity was normal. She complained of abdominal pain, nausea, vomiting, nervousness and irritability. Emotionally, she was slightly depressed. No delusions or hallucinations could be elicited and the sensorium was clear. Judgment and insight were somewhat defective. She felt that she was simply physically ill and that there was nothing wrong with her mentally. She was incapable of making plans for the future.

CASE 2. — Miss L. W., a 31-year old, single, white woman. Secretary. Miss L. W. has been ill since the age of 17. It appears that she revealed a tendency to become upset easily and complained of irritability. She also revealed some difficulty in concentrating upon reading material. In December 1942, an old spinster aunt came to live with her family. This person was a domineering, aggressive individual who ruled the household with an iron hand. The patient became rebellious, refused to listen to her mother, and displayed "streaks of moodiness." In December 1943, she developed an acute bronchitis with an irregular febrile reaction, with intermittent perspiration and coldness of the hands. At this time, a progressive loss of weight was noted and the patient went from 115 to 85 pounds. She had a non-productive cough but the x-rays and sputum examinations were negative. Following this, she was hospitalized and placed on a high caloric and high vitamin diet and massive doses of vitamin B complex. The patient showed evidence of a functional regurgitation and was resistive and negativistic. She did not appear to be amenable to psychotherapy.

Her past history indicated that very little is known about the birth and early development of this patient. She attended grade school and one year of secretarial college. She had numerous friends but was inclined to be shy and quiet. The foster mother indicated that since the age of 4 she had always been affectionate and friendly, but since the age of 17 she had become more reserved and retiring. She had only a boy-friend who is in the Armed Forces. Very little is known about the sexual development and attitude toward sex. She had many friends but never had any sexual experiences whatsoever. The menses were normal up to two months ago, when they ceased completely. An appendectomy and a tonsillectomy were performed in childhood. There was a history of a chronic sinusitis some years ago and several attacks of pleurisy. Her father and mother are alive and separated. Her foster mother is seventy-one years of age. Her foster father died at the age of sixty-four of a heart attack. She was very attached to him and deeply affected by his demise. She has one brother, who appeared to be somewhat subnormal intellectually. The physical examination showed a very slender, extremely thin, emaciated white woman, who appeared much younger than her stated age. Breast tissue was well preserved. Axillary and pubic hair were present. The heart was normal. Blood pressure was 118/78. Temperature on admission was 100, pulse 96, and respirations 22. She weighed 78 pounds. Height 5'1". Routine laboratory examinations, including urine, blood count and serological tests, were all normal. Basal metabolism was plus 8. EKG showed no abnormalities. EEG reported: "No specific or focal abnormality." X-rays of the skull and chest were negative.

The patient was rather antagonistic toward the mental status examination but during the conversation she gradually became more relaxed and less hostile toward the environment. The stream of mental activity was relevant and coherent. She seemed to be very much concerned about her presence at the hospital but did not appear to be concerned about her physical condition. Emotionally, she was slightly depressed and somewhat retarded; there was some poverty of emotional expression. No hallucinations or delusions could be elicited and her sensorium was clear throughout. Insight was defective. She did not understand any of her reactions and did not appreciate the fact that she was in need of hospitalization. She stated that there was nothnig really physically or mentally wrong with her and that she had lost weight because she had a bronchitis. She explained her anorexia as a symptom associated with her intestinal tract and the old bronchitis.

Both patients received a series of five narco-analytic interviews during the first two weeks of hospitalization. A brief résumé is presented here of each case.

CASE 1. — At the initial interview, the patient immediately expressed feelings of guilt referable to her sexual association with the husband. This information was offered spontaneously when questioned about her feelings. There appeared to be a cyclic repetition of the main complaints dating back to 1934, following the development of coronary disease in her father. At this time, the patient developed a fear of illness, and she elaborated migrainous headache which resembled the type of headache noted in her mother. She also identified herself with her mother in the child-father relationship, indicating the strong Oedipal associations. This appeared to be the core of the patient's earlier psychological associations. For example, she remembered distinctly that she began to miss meals because her father was taken to the hospital. She subsequently elaborated anorexia and admitted freely that the nausea was not a symptom in itself but represented her inner repulsion toward food in any form. She was unable to interpret the symbolism of food but repeatedly recognized that it was vaguely associated with the love for her father. She was able to recollect an experience dating back to 1934, at which time she saw her mother vomiting and attempted to correlate her own anorexia with her mother's vomiting.

The subsequent interviews revealed the preoccupations with weight gain, especially with the eating of specific foods. For example, on one occasion she said: "I've eaten all my food, practically all, I ate everything except the eggs." She also was able to associate her attacks of migraine with abdominal distress and her father's illness. She revealed a deep dissatisfaction with the sexual relationships with her husband, chiefly because she believed that her cohabitation might resemble the relationships of a brother and sister. The possible incestuous significance of this was never clear in the patient's mind. However, she explained she had known her husband for many years, and that she regarded him as a playmate and not as a lover. She expressed dissatisfaction with the home situation, with the living arrangements, with the financial situation and stated that she was afraid of vomiting "because five people lived in three rooms." The vomiting symbolized rebellion against an inadequate and insoluble home situation.

The patient attempted an elaborate rationalization of her difficulty in making a sexual adjustment. For example, she displayed a frank hostility toward the concept that her sexual maladjustment might be related to her anorexia. She said: "My husband disappoints me. He leaves in the morning when it is dark and comes back home when it is dark." The rejection of her husband's sexual advances represented an infantile fixation with the strong Oedipal trend. It is

interesting to note that this tendency could be successfully redirected under narcosis and the patient was able to identify her father in the same symbolization. It is of considerable interest that when her husband left for the U.S. Army Forces she was glad that she could not bid him good-bye because she "did not wish for him to see her suffering." This ancient mechanism of self-expiation has been seen on the conscious level without insight.

These findings constituted a distributive type of analytic procedure which served to establish rapport, combined with relaxation and a feeling of well-being on the part of the patient. This synthetic procedure was subsequently studied on the conscious level with the patient. The rapidity of response varied considerably. The resistance which was initially present on the conscious level was rapidly suppressed following the gradual development of insight. The constellation of strong Oedipal feelings,, hostility toward her mother and husband, and feelings of inadequacy and insecurity disappeared slowly to be replaced by a greater security, ambivalence toward the father and acceptance of the mother and husband. The most marked weight gain occurred at the period in which the transitional phase of insight development was observed. The verbal release of conflict material, in itself, did not apear to be associated with a marked weight gain. However, the recognition of the conflict stimuli and repressed childhood memories served to release some of the tension and anxiety which colored the clinical picture. For example, the patient was able to recollect a history of enuresis dating back almost twenty years, which never entered the sphere of the present complaint, but which was present throughout the entire episode of this patient's illness. The patient had been seen previously by urologists, and the enuresis was recognized as being associated with emotional factors. With the psychological improvement of the patient, the enuresis completely disappeared much to the surprise of the family because this symptom had been considered incurable. It is perhaps indicative that the patient had utilized the tendency toward dramatization of her complaints from early childhood, and the ability to discuss some of her earliest childhood memories added materially in the prompt disappearance of this symptom.

The family management should be briefly mentioned because the oversolicitousness of the parents is definitely detrimental to the best interests of the patient early in the course of therapy. The reeducation of the family should be performed in a series of planned interviews without any trace of accusation or criticism because the best interests of the patients are served by explaining the symptoms on the basis of altered physiology due to emotional conflicts. This explanation is more readily acceptable. Later, after a substantial weight gain is made by the patient and insight is developed to the point where the symptoms do not cause anxiety, brief visits are recommended.

At the termination of the narco-analytic and psychotherapeutic interviews, the patient gained over forty pounds in weight. Her general appearance, her attitude and manner were indicative of a marked improvement and the disappearance of all the major symptoms of her illness.

CASE 2. — At the time of the initial interview under narco-analysis, this patient expressed considerable resentment toward her previous hospitalization, she dwelt at considerable lenght upon the symptoms of nausea and abdominal pain, which she referred to the bladder area. She did not elaborate any sexual content, but expressed a great affection for her mother with considerable resentment toward the fact that her mother "deemed it advisable for the patient to be hospitalized despite the fact that her mind was normal." She blocked repeatedly in discussing the onset of her illness and brought out the fact that the initial attack of bronchitis coincided with gastro-intestinal difficulties, slight vomiting

and diarrhea. She repeatedly indicated that bronchitis was the cause of her present complaint and that her present anorexia could be attributed to the physical impairment caused by this disease.

The patient's facial expression was flattened and immobile. There was a paucity of emotional expression associated with the conflict material subsequently elaborated. With progressive interviews, it was clear that the dead father represented the Oedipal link in the background of the patient's illness. She had accused her foster-mother of being responsible for the death of her father and hid her hostility behind the front of affection in her present child-parent relationship. The hatred which she bore her mother was redirected toward her aunt who temporarily made her residence in her foster-mother's home. She indicated on several occasions that she could not understand her mother's attitude and tolerance toward this impossible person (the aunt) and the relationship was of unwholesome character. Repeated attempts to evaluate this subject were met with great resistance.

The cessation of menses was interpreted as non-volitional in character and the concept of pregnancy did not evoke any remarkable response other than a retiring form of amusement. It was evident that a strong hedonistic component was attached to the basic narcissism in this patient's personality. Her sexual concepts referable to the possibility of a heterosexual adjustment were immature and ill-defined. She had previously indulged in sex phantasy withouth object fulfilment. Masturbatory exploration had been utilized exclusively for many years with accumulation of guilt feelings dating back to early childhood. Shortly prior to the development of her bronchitis, she had attempted to make a heterosexual adjustment but had failed in the attempts and had interpreted her failure as the failure of her femininity. The continued interviews confirmed the overindulgence in sex-phantasy and the use of visual imagery short of hallucinatory activity. The weight gain of this patient was made rapidly following the use of sodium amytal narco-analysis and the rate of increase varied remarkably during the period of hospitalization.

The attempts of synthesis were not associated with any remarkable degree of insight and it became increasingly apparent that the strong schizoid coloring and the crystallization of personality structure in a seclusive, stubborn, individual obviated some of the benefits which were noted in the early interviews. The symptomatic improvement of this patient was not considered a recovery. The attitude of the mother was unwholesome and was influenced by oversolicitousness, feelings of guilt, and desire to treat a thirty-one year old woman as a young child. Despite this, the symptoms of abdominal pain, vomiting and nausea completely disappeared and the symptomatic improvement of the patient was beyond question.

SUMMARY AND CONCLUSIONS

1) Two cases of anorexia nervosa are described and the treatment by narco-analysis and insulin is recommended.

2) The utilization of sodium amytal is a valuable adjunct for the establishment of rapport and the rapid accumulation of conflict material in the history.

3) The relaltionship of anorexia nervosa as a symptom complex is described and outlined for comparative purposes in the psychoneurotic and the schizophrenic subject.

4) A program of therapy and management of anorexia nervosa is suggested.

5) Narco-analysis in anorexia offers a rapid method of overcoming the rejection of food and a rapid establishment of a substratum for the successful use of insulin therapy. The use of sodium amytal per se was not attempted due to previous unsatisfactory effects with the use of barbiturates elsewhere in the treatment of this disorder.

6) It is emphasized that narco-analysis and insulin therapy are to be considered as an adjunctive measure to the more complete program of psychotherapy and reeducational activity.

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