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Narco-Analysis for Criminal Interrogation

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I. NARCO-ANALYSIS FOR CRIMINAL INTERROGATION

James H. Matthews

The Division of Anesthesiology wishes to take this opportunity to present a preliminary report of our experience with narco-analysis for criminal interrogation, or the so-called "truth serum" tests. The report is based on 10 examinations conducted during the past 19 months. From this small number of cases, we have gained an insight into the vast fields of psychiatry and criminology and have discovered the acute need for research development of an anesthetic agent and technique which will enable these two forces to accomplish their purpose. This is a "new" search only in the sense that it is made by anesthesiologists and not by psychiatrists or criminologists.

Our attention was directed to the problem on September 28, 1948, when the Department of Protection and Investigation of the University requested the first examination of this type in the history of the two departments. Since that time 10 cases have slowly accumulated. Our interest and investigation into the problem has been as slowly provoked. Now that our lethargy is shaken, we are earnestly trying to evaluate our experiences and estimate the possibilities for research from the point of view of the anesthesiologist.

Historical Development

The narco-analytic technique was introduced to psychiatry by Bleckwenn in 1929 when he reported the use of sodium amytal for the psycho-analysis of patients he could not hypnotize. Since that time narco-analysis has acquired a respected place in the practice of psychiatry. In 1932 Lorenz suggested that narco-analysis could be used for criminal interrogation. At the same time House reported the use of scopolamine for certain police investigations. The interest in these suggestions and reports did not become evident in the medical literature until the war years.

The principal investigators of "truth serums" have been psychiatrists and criminologists. They report the use of ether, nitrous oxixe, scopolamine, pentothal, amytal, nembutal, sonoryl, narcomunal, evipan, and somnoform for ordinary narco-analysis. Apparently their criminal interrogations have been conducted only with pentothal, amytal, or scopolamine narcosis. They have not agreed on the choice of drugs for either purpose.

Regardless of the drug or technique used, they have secured only 50 per cent success in the detection of deception which can later be substantiated by facts.

The most popular technique (using pentothal or amytal) required the slow induction of the subject to the surgical plane of anesthesia. Thereafter he was allowed to regain the senses of hearing and speach. Questioning began and was continued until the patient evidenced enough control of thought-mechanisms to evade or guard his answers. This period lasted for five to ten minutes, after which the process was repeated, again and again. The average length of the examination was reported between one and two hours. Their recorded incidence of complication for all types of narco-analysis is 1 in 3,000 cases. No statistics were available on the incidence of complication in narco-analysis for criminal interrogations.

Theory

A number of explanations have been offered for the production of confessions under narcotic drugs.

The natural caution of a criminal urges him to seek seclusion and avoid all future connections with the crime he may have committed, but his desire to claim credit for the acts, plus a potent wish-for-punishment may cause him to neglect his safety and perform acts that may inevitably lead to his capture. Aside from the desire to achieve self aggrandizement, recognition, and the wish-for-punishment, confessions may follow when

fears attendant upon their declaration are reduced. Fears of retaliation, social stigma, pecuniary loss and punishment are better met by the reinforced ego which may make a realistic compromise with the community, balancing the precarious safety of the secret against the squaring of accounts with the social environment.

Kubie, Grinker, Freed, and Barbara have commented on this pehnomenon, suggesting that narcosis promotes removal of tension, anxiety, and defense barriers and helps the reintegration of the ego functions. Narcosis may diminish caution and restrict the desire for self-preservation. Judicious behavior becomes impossible, and consciously motivated activity is substituted by fundamental physiologic drives. In this state the demand of an intolerant conscience for atonement may dominate the content and direction of the catharsis.

Lorenz implies that the ideal state for eliciting a confession is that where the individual is "oriented but unable to inhibit automatic responses to stimuli."

It was suggested by House that the patient under scopolamine," ... cannot create a lie and that there is no power to think or reason."

De River states that you cannot confuse the truthful man because he cannot remember what he said under the influence of the drug. Further, he asserts that "no man can tell a lie, no matter how many times he repeats the story, without thinking the truth at the same time." He stresses this basic principle: "the only function of the center of hearing is to evoke memory. With the abolition of will power and the ability to reason removed, the tongue will automatically articulate any impulse memory sends to it. If too many questions are asked, the brain becomes tired, and the wrong answers will be obtained."

Patients who have a strong desire to confess, but who for either emotional or political reasons cannot bring themselves to it may even on a conscious level welcome narcosis as an excuse to inform. Into this category fall men who fear to violate the "criminal's code" against squealers even when it is to their interest to do so. Other patients, who placed themselves in difficult situations by malingering amnesia, used the analytic sessions as a device to "recover" their memory without loss of "face".

Ethical and Forensic Problems Involved

The fact that the doctor can extract relevant information from his patient which might be useful to the prosecution of a criminal act imposes an obligation on the medical profession to use it wisely. The duty of the physician to protect his community against the depredations of criminals is sometimes at odds with his oath to keep his patient's secrets.

The law arbitrarily states that certain secrets cannot be withheld by the doctor without his risking criminal prosecution. For example, in 1926 the New York State Legislature enacted a statute requiring physicians to report to the police all wounds from firearms, powder burns, etc. Stryker describes the finding of the court in the cases of Peo. v. Sliney, 137 N.Y. 570; and Peo. v. Hock, 150 N.Y. 291, where it has been determined that a physician who examines a patient at the request of the district attorney for the purpose of giving information as to the prisoner's sanity, was competent to testify to any information gained as a result of that examination, as "the relationship of physician and patient was not there."

It has been definitely established that the statutes protecting the patient by the recognition of the concept of the privileged communication "cannot be used to shield a murderer or other criminal." A Court of Appeals adequately summarized the limitation of this doctrine by stating the statute was "...to enable a patient to make known his condition to his physician without danger of any disclosure.

by him which would annoy the feelings, damage the character, or impair the standing of the patient while living, or disgrace his memory when dead."

From the point of view of the law-makers, the duty of the doctor is clear. When he is aware of a criminal act committed by a patient, it is expected that he will inform the authorities concerning the crime.

Although an individual who is queried by an alienist for the states attorney may not be said to enjoy the patient-doctor relationship, he is still protected by the constitution of the United States. Article V of the Bill of Rights states that "No person...shall be compelled in any criminal case to be a witness against himself..."

The alienist must, therefore, decline to perform narco-analysis on a patient who does not relinquish his rights or understand that anything the interrogation may reveal may very well be brought up in court and charged against him. Yet the doctor performing narco-analysis has at his service a procedure which is kinder and more humane than so-called "third-degree" methods.

Application and Utility

Should the patient sign a release, narco-analysis might be useful to the courts. We suggest the following instances:

1. WHERE AN INDIVIDUAL IS GUILTY OF CRIME AND BELIEVES HE CAN CONCEAL HIS GUILT EVEN IF SUBJECTED TO "TRUTH SERUM":--His motive for submitting to the test might be to strengthen his defense in court. He might, by the terms of his agreement, be able to call the doctor who conducted the analysis as a defense witness, and bring up the transcript indicating his "innocence" in open court. On the other hand, refusal to submit to narco-analysis might be mentioned by the prosecution in an effort to undermine his defense and prejudice the jury against him. This tactic might be used in forcing the patient to submit in the hope that he could avoid incriminating himself. Ludwig's experience with malingerers bears out the possibility that he might be successful in refraining from answering by a completely negativistic attitude. De River substantiates this with the statement that a subject who has been administered drugs to a sufficient amount and who continued to fight the effects of the drugs, demonstrates his guilt. However, it is probable that he would only succeed in trapping himself if he tried to maintain an alibi with the assumption that he would be able to use his wits and reasoning power to ward off incriminating questions while drugged.

2. THE SUSPECT WHO IS INNOCENT:--A man who has difficulty in establishing his innocence would make a strong mark in his own defense by submitting to lie detection or narco-analysis. His attitude while under the influence of the drug would indicate whether his cooperation was simulated or real, entirely apart from the actual transcript and answers to questions. The material developed during his analysis could probably be substantiated by facts sufficient to effect his release.

3. THE SUSPECT WHO HAS LOST HIS MEMORY FOR THE EVENT AND CANNOT SAY WHETHER HE IS INNOCENT OR GUILTY:--An individual may become implicated in a criminal action while under the influence of drugs, liquor, or while suffering a genuine fugue state or amnestic attack. Under narcosis he might divulge facts which would indicate his unconscious retention of memories relative to the events in question, and these in turn could clear or incriminate him. Perhaps too often the police authorities decline to investigate the validity of such assertions.

4. THE FALSE AVOWERS OF GUILT:--These are the publicity-conscious exhibitionists, the neurotic, morbid-minded individuals, the pranksters, and the prepsychotic individuals who always crop up after an infamous crime and must be weeded out by the police at consider-

able expense and with difficulty. Narco-analysis might quickly determine not only their innocence but their basic motive in falsely confessing. The fact that they have signed releases would make it possible to prosecute them for obstructing the course of justice should this be necessary to discourage recurrence of such behavior.

5. ESTABLISHING THE INNOCENCE OR COMPLICITY OF ASSOCIATES AND FRIENDS OF THE CRIMINAL OR PATIENT:--The implication of buddies and accomplices is refused for fear that if he submitted to narco-analysis he might be able to give us the name of the actual thief and be absolved of being an informer. No less important is the testimony of a subject who absolves a friend suspected of being an accomplice or whose alibi can be substantiated.

The Department of Protection and Investigation

Not only was our study of narco-analysis for criminal interrogation inspired by the Department of Protection and Investigation, but its success and continuation is dependent upon their splendid cooperation. These examinations were conducted as a joint project; and any interpretation of facts garnered from this series is made with their tireless effort and whole-hearted participation in mind.

The requests for criminal interrogation by narco-analysis were initiated in the offices of the county attorney, or the states attorney when the crimes investigated occurred outside the borders of Minnesota. Because of the legal position of the Department of Protection and Investigation, the requests were routinely passed through the officials of the Minnesota State Bureau of Criminal Apprehension.

At the initial appointment, a brief of the entire case was presented by the authorities requesting the examination. This usually included all statements made by the subject, witnesses, investigating officers, criminologists, crime laboratory technicians, and any others having knowledge pertinent to the crime. Maps and drawings later served as an invaluable aid to the staff conducting the actual interrogation. Only after a thorough working knowledge of the crime had been assimilated was the subject interviewed by members of the Department. Their attitude toward the patient was of a friendly unbiased character designed to gain his confidence and cooperation. Caution was exercised to avoid antagonizing him, regardless of his attitude.

During the course of that interview, one or more examinations were conducted with the Keeler Polygraph, a lie detector apparatus which has been found 96 per cent accurate in over 500 cases investigated at this institution. (The Department is nationally recognized as one of the most reliable centers for the detection of deception with the Keeler Polygraph.) As a rule the results of the test were not discussed with the subject, although in every case the conclusions drawn from the lie detector examinations substantiated those later arrived at from narco-analysis.

When the circumstances permitted, the Department of Protection and Investigation secured psychiatric evaluation tests for the patients. Because we were unable to secure the tests in every patient of this series, we have declined to report their results. Perhaps more study will enable us to utilize these tests as an additional guide to the correct technique of interrogation for the individual patient.

The interview with the subject was concluded with a discussion of the written release and hospital operating room permit he was requested to sign at that time. Every precaution was taken to explain the possible consequences of his waiver of rights, and to specifically impress him with the fact that the transcription of the interrogation could be used for or against him in a court of law.

Ten patients studied by narco-analysis,

according to the technique described below, gave us varying amounts of information which had been withheld from other investigators. Eight of the subjects were under arrest on suspicion of murder. Three of these were also suspected of or charged with sex offenses, and two other subjects were accused of armed robbery. The age of the patients ranged from 18 years to 72 years; there was only one woman in the group. The crimes under investigation were committed from four days to twenty-eight years prior to their admission here. All of the subjects steadfastly insisted they were completely innocent of the charges or offenses, or denied knowledge which could have been of help to the authorities.

Techniques and Observations

Prior to actual induction of the medication, the patients were interviewed by the anesthesiologist. The patient-doctor relationship was maintained and the fact that the patient was a prisoner, under police security, was quietly accepted but not stressed. It was established at the outset that everything the examination revealed was confidential, and that the audience to his interrogation would be limited to certain hospital personnel, the members of the Department of Protection and Investigation, and the police authorities who accompanied him. (Perhaps a second legal safeguard is contained in the fact that all those who participated in the examination, including the physician, were fully authorized police officials.)

Much of the suspicion against the doctor was lessened when his interest in the patient's "nervousness," "irritability," "tendency to get into trouble," and "bad breaks" was expressed and an investigation of medical problems was pursued. A history of his medical symptoms and systems was reviewed at this time. A brief and simple explanation of the action of the drugs, and the technique of their administration was made clear to the patient. It was emphasized that the drug would make him feel sleepy, and encourage him to discuss things with the doctor that might enable everyone to gain a better understanding of the case. Patients who had claimed to suffer amnesia were told that the drug would help restore their memory for the forgotten episodes. The attitude was positive, forthright, but considerate. Seven patients obeyed without temporizing and accepted the doctor's explanation; three were suspicious and wary but offered no protests. Finally, a verbal confirmation of their written permission was obtained.

The patients were then led to a dressing room where they relieved themselves and exchanged their upper clothing for a scrub suit jacket. The examinations were all conducted in the operating room suite, with the patient comfortably reclining on the operating table. Care was taken to remove most of the usual operating room apparatus and reduce the apprehension caused by such an atmosphere as much as possible. (A search through the hospital failed to reveal a room satisfactorily equipped and conditioned for narco-analysis.) In compliance with previous promises made to every patient, they were given a thorough physical examination, and it was possible to inform them that there was no contraindication to the administration of the anesthetic agents chosen for their case. A nurse was present in the room throughout the entire narco-analysis of the one woman interrogated.

We reasoned that adequate premedication would serve the same protective functions for narco-analysis as for general anesthesia, and it was used in the present series when there were no contraindications. Six of the patients were given oral premedication of seconal grs. 1½ one to two hours prior to induction. One patient was given intravenous premedication of seconal grs. 3/4 fifteen minutes prior to induction. This change in the routine occurred when the intravenous form of seconal was recently introduced to the Division of Anesthesiology for the first time. The other three patients were unpremedicated. We are impressed with the fact that the amount of pentothal required to secure

initial rapport in the subjects was reduced in those cases premedicated with seconal, particularly in the one case given intra-venous seconal. We could ascribe no untoward reactions to the dose or route of administration of seconal in these cases.

The technique of administration of the three agents employed in this series, morphine, scopolamine, and sodium pehtothal was varied with each case as we strove for proper rapport with the patient. Morphine and scopolamine alone were used in one interrogation; pentothal alone was used in a second case. Morphine, scopolamine, and pentothal were used in three examinations; and a combination of pentothal and scopolamine was used in five cases. It is our impression that the cases in which the latter two combinations of drugs were employed (a) required much smaller doses of each drug, (b) were of shorter duration; and (c) demonstrated the most favorable levels of anesthesia for narco-analysis. Note at this point that these combinations are more closely similar to those employed for general anesthesia than morphine and scopolamine when used alone or in combination. The technique we have found most often successful will be described.

A vein on the forearm was selected for veni-puncture with a No. 15 gauge needle, and a Gilson apparatus was attached and firmly taped in place. It was advisable to use a large gauge needle to avoid clotting of the smaller needle in the prolonged examinations. The Gilson apparatus enabled us to maneuver the patient and the syringe with freedom. At the time of veni-puncture the level of sedation obtained from the premedication, the patient's age, weight, habitus, and degree of emotional unrest was evaluated to determine the correct dosage of intra-venous morphine and scopolamine. This was found to vary through the entire series from morphine grs. 1/12th to grs. 1/4; and for scopolamine from grs. 1/300 to grs. 1/100. The proportion between morphine and scopolamine was maintained in the ratio of 1:25. An interval of from five to fifteen minutes was consumed in evaluating the effect of these medications on the patient. A solution of $2\frac{1}{2}$ per cent sodium pentothal in distilled water was available, and was then injected at the rate of 1 to 2 cc. per minute while the patient was engaged in constant conversation on totally irrelevant topics.

It was found necessary to bring the patient through the stages of light sleepiness, mild disorientation with a tendency toward euphoria, to confusion and somnolence, with irritability if roused by painful stimuli. The slow descent to this plane of the first stage in anesthesia required between 15 cc. and 25 cc. of pentothal, and was accomplished after 10 to 15 minutes in the robust patients. We found it unnecessary to allow the patients to recover gradually as recommended by many authors, but instead were able to stimulate the patient sufficiently to engage him in conversation immediately. The outstanding exception to this observation will be discussed later. With repeated stimulation and the judicious administration of from 1 to 4 cc. of pentothal at intervals varying from 5 to 30 minutes, the patient could be held in this stage while criminal interrogation proceeded. Almost uniformly the most incriminating statements were obtained at that level of anesthesia just before unconsciousness in which the patient required strong stimuli and loud, repeated questioning to affect the sense of hearing and speech. At that plane the speech was thick, mumbling, disconnected, and characterized by echolalia and paralogia. No other reflex or sign was constant for the group or for the same patient throughout the same examination.

As the interrogation progressed over a period of from two to three hours the patients were given additional amounts of morphine and scopolamine. The various eye signs, the subjective and objective symptoms of scopolamine administration, and the accumulated dose of pentothal usually indicated the need for about one-half the quantity of morphine and scopolamine originally injected. The intramuscular or intra-venous route was chosen

according to the rapidity of onset of effect, and duration of effect desired from these drugs. Their sedative action was immediately reflected in the decreased need for additional pentothal. When the examinations extended past the fifth and sixth hours, it was occasionally necessary to repeat the medications employing the same criteria to determine the agent, quantity, and route.

The total amount of pentothal administered varied between 48 cc. and 79 cc., while the total dose of morphine was from grs. $\frac{1}{2}$ to grs. 3/4 and scopolamine doses ranged between grs. 1/75 and 1/100. . The examinations lasted between $2\frac{1}{2}$ and $11\frac{1}{4}$ hours. The larger amounts of drugs were required during the more extended procedures. There were no frank complications encountered in the series, although two subjects exhibited what might have been the early signs of scopolamine overdosage. The anesthetic equipment and apparatus, as well as alaleptic drugs, were constantly within arm's reach, but were never required.

In the last subject examined, a 58-year-old male, premedication with seconal was omitted because of a questionable history of pulmonary pathology. Induction medication consisted of intravenous morphine grs. 1/6 and scopolamine grs. 1/100. (The ratio was altered for the same reason.) As an attempt was made to engage the subject in conversation, 6 cc. of $2\frac{1}{2}$ per cent sodium pentothal was slowly injected. It soon became apparent that the patient had become negativistic, but not until approximately 15 cc. of pentothal had been injected. His response to stimuli was characteristic of a light plane of anesthesia, but he could not be induced to give voice to obvious pain. During the next hour and a half, additional pentothal was administered in the hope that a depth of anesthesia could be achieved which would abolish the protective mechanism. After a total of 28 cc. of pentothal had been injected, over two and a half hours time, the realization that he was then too deeply narcotized dawned upon us. As a rapid solution, we chose to administer a solution of picrotoxin containing 3 mg. per cc. Five minute intervals elapsed between the injection of each cc. until 9 mg. had been administered. The patient's sleep was undisturbed except for taking blood pressure recordings (which did not change) and an examination of the pupillary reflexes. After fifteen minutes he responded instantly to stimulation and began to reveal incriminating evidence against himself within an hour.

Reports on the use of coramine, ephedrine, caffine, and methedrin for cerebral stimulation in narco-analysis had gone unnoticed in our review of the liaterature until we accidentally discovered similarity in the action of picrotoxin and these agents already described by several authors. Perhaps we will find the drugs a beneficial addition to our technique. We are certainly eager to investigate their use in narco-analysis.

In addition to the physical characteristics of speech and body enumerated above, the content and quality of the replies obtained from the patients was a fairly consistent guide to the depth of narcosis and the success of the examination. The modification of consciousness by the narcotics was characterized by confusion, bewilderment, inability to assay and select thought, impoverishment of vocabulary, automatic rather than reasoned responses, disturbed memory, expanded or contracted sequency of chronology, and the loss of discrimination between what was real and what was illusory.

The interrogation during narco-analysis was performed almost exclusively by members of the Department of Protection and Investigation. Their skill in phrasing the questions and evading the ego protective mechanisms of the subconscious mind was necessary to secure a complete examination. At this time we have no means of evaluating to what degree the drug or drug technique influenced the success of the tests and to what degree the psychology of interrogation was responsible for the end result.

The technique of questioning varied in each case according to what was known about the patient's personality through history and interview, the seriousness of the legal charges, the patient's attitude under narco-analysis and his rapport with the investigators. In the begining the questions were directed at establishing the identity of the patient and associating him with the scene of the crime and the space of time involved. As the desired plane of anesthesia was approached, the questions were more skillfully worded and pointed. Key questions were reworded when it was obvious that the patient was withholding the truth, and the fact of a given denial was quickly passed over and ignored. At times it was necessary to check the facts obtained by reference to the police authorities who accompanied the patient, because there was no other way for the examiner to distinguish truth from fantasy. Persistent careful questioning reduced the ambiguities, but did not eliminate them entirely. We must indicate that our experience with pentothal and scopolamine did not bear out the conclusions of House and De River in that our patients could sometimes lie and their reasoning powers were sometimes present though much distorted. When the examination followed many weeks, sometimes years, of intensive questioning and investigation, it was much more difficult to evade the defenses. The best results were obtained when the narco-analysis occurred early in the investigation, prior to repeated and severe questioning.

The most valuable interrogation period lasted from five minutes to one hour, after which unless more pentothal or scopolamine was injected and the patient deepened in anesthesia, he rapidly recovered, and became aware that he had been questioned about his secrets. Depending upon his underlying personality structure, his fear of discovery, or his degree of disillusion in the interrogators, he became negativistic, hostile, or completely assaultive. Some patients had to be forcibly restrained during this period to prevent them from injuring themselves or others. The police authorities continued questioning and sometimes, because of the patient's regressive, diffused anger, the assumption that he had already been "tricked" into confession, and his still limited sense of discretion, he defiantly acknowledged his guilt. As the excitement stage passed, the patient either feel back on his original story or verified the confessed material.

The decision to continue or terminate the narco-analysis was shared with the Department of Protection and Investigation, although it was modified by the Division of Anesthesiology only when we felt that a more effective state of narcosis could be or could not be achieved or was contra-indicated by the patient's physical condition. It was necessary to carefully guard against mental fatigue and heightened suggestibility during the last hours of the lengthy examinations. In the final stages of narco-analysis an attempt to assuage the guilt feelings that arose out of recollection of the offense was made by indicating that the confession may well have been an indication that the patient was ready to make amends, was remorseful, and had "learned his lesson".

In our series of ten cases confessions of guilt were obtained from three. These were fully acknowledged and elaborated upon by the subjects the following day. The other seven subjects divulged a sufficient amount of new material withheld from previous investigators, and conducted themselves in a manner to convince the authorities of their innocence. In most of these cases subsequent police investigation has now substantiated their claim.

Tape recordings of the entire conversation during the interrogation were made by the Department of Protection and Investigation. They remain in the custody of the Department as an integral portion of their report to the authorities requesting the investigation. It is important to remember that although the recordings of these investigations have been admitted to the court records, they are valuable only when they reveal convicting facts or clues leading to facts.

Thus, even the innocent who might have been induced to give incriminating answers under narco-analysis are protected by the absence of substantiating facts and evidence. Until the legal test of the so-called "truth serums" has been thoroughly established, they will not stand alone as convicting evidence.

We have requested that the Department of Protection and Investigation furnish us with certain excerpts of those recordings in order that we may hear them now. Perhaps with their aid we can demonstrate through the character of speech and the degree of response the extent to which rapport was obtained during narco-analysis. Since the excerpts we are about to hear are from incriminating confessions, they have not been included in the written report.

Comment

The narco-analytical experience obtained in the criminal interrogation of these ten cases cannot be deemed sufficient to warrant the postulation of recommendations, of theory, or dogma. Outstanding among the impressions obtained was the realization that a thorough clinical investigation of the anesthetic agents, and the techniques of their administration for this purpose has never been made under critical conditions.

Two major differences from ordinary narco-analysis and the method described above must be stressed. First the obliviscence of consciousness was invariably longer than average, sometimes requiring maximum tolerated doses of the agent employed. Second, the patient was maintained in a plane of anesthesia seldom required for so long in simple narco-analysis.

The anesthesiologist can be of assistance to the criminologist and the psychiatrist in evaluating the anesthetic agents, in recommending the technique of their administration, in preventing, recognizing, and caring for the complications which might ensue from their use. From our experience it is obvious that narco-analysis is the utilization of a plane of anesthesia for probing of the mind, and that it is difficult to maintain that plane of anesthesia for prolonged periods with such agents as pentothal and scopolamine.

This is a prelimirary report; we feel that our work has only begun. The most ideal facilities are close at hand for us to employ all of the anesthetic agents, experiment with the techniques of administration, and to utilize them in all types of crime regardless of the moderation. With the full support and cooperation of the law enforcement agencies of this state, which we appear to have, such an investigation is possible.

Trial and error may dull our enthusiasm, but these first ten cases have not. We must claim 100 per cent success in the detection of deception.

Summary

1. A short review of the historical development and the various hypotheses relating to narco-analysis for criminal interrogation is presented.

2. Various ethical and forensic problems which may arise with the use of this technique are described.

3. With the signing of a release by the patient permitting use of his testimony derived in drug narcosis, the technique may have limited value in courts of law to aid establishing guilt or innocence; weeding out false avowers of guilt, and exposing malingerers.

4. The vital participation of the Department of Protection and Investigation in this joint project is outlined.

5. Narco-analysis with pentothal, scopolamine, and morphine was utilized for the successful criminal interrogation of ten subjects. The techniques

and observations from our experience are presented.

6. Thorough knowledge of the patient's background and personality, as well as the events leading up to the imprisonment or investigation were necessary in devising an approach to questioning unique for each patient.

7. Prolonged, deep narcosis exceeding the limits usually employed with narco-analysis and persistence in questioning had to be employed in the technique of interrogation.

8. The possibilities for research effort on the part of the anesthesiologist have been outlined.

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Lancet, 2:1, '40.

24. Smith, Sydney
Forensic Medicine
Boston, Mass., Little, Brown and Co., '39.

25. Snyder, LeMoyne
Homocide Investigation.
Springfield, Ill., Charles T. Thomas Co., '45.

26. Somerfield, Ralph and Tovell, Ralph M.
Successful treatment of hysterical paralysis with pentothal sodium and psychotherapy.
Anesthesiology, 2:50-60 (Jan.) '41.

27. Somnoform Anesthesia Manual
Straford-Cookson Company, '30.

28. Starkey, A.
Light ether hypnosis.
Med.Rec., 631, '17.

29. Stryker, Loyd P.
Courts and Doctors.
New York City, The MacMillan Co., '32.

30. Tilkin, L.
The present status of narcosynthesis using sodium amytal.
Dis. Nervous System, 10:215-18, (July), '49.

II. MEDICAL SCHOOL NEWS

Coming Events

May 9- Duluth Clinic Lecture - "Metabolic Effects in Man of ACTH and Cortisone", by Dr. J. W. Conn, University of Michigan Medical School, Museum of Natural History Auditorium - 8:00 p.m.

May 11-13 Continuation Course in Eye, Ear, Nose, and Throat for General Physicians

May 22-27 Continuation Course in Proctology for General Physicians

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Dr. Conn to Give Duluth Clinic Lecture

Dr. Jerome W. Conn, Associate Professor of Medicine and Chief of the Division of Metabolism and Endocrinology at the University of Michigan Medical School, will deliver the annual Duluth Clinic Lecture on Tuesday, May 9, at 8:00 p.m. in the Auditorium of the Museum of Natural History on the University Campus. Dr. Conn, who is well known for his many contributions in the field of endocrinology, will speak on the subject of "Metabolic Effects in Man of ACTH and Cortisone". Dr. Conn's lecture will be the fourth in the annual series made possible by a gift to the University of Minnesota from the Duluth Clinic.

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Faculty News

Doctors S. S. Barron, John Coe, Robert Hebbel, N. H. Lufkin, J. F. Noble, and Carl Peterson from the Department of Pathology attended the annual meeting of the American Association of Pathologists and Bacteriologists at the University of Wisconsin at Madison on April 13-15.....Dr. Arthur Kirschbaum from the Department of Anatomy presented a paper at the meeting of the American Association for Cancer Research at Atlantic City on April 15-17.....Dr. Cecil J. Watson, Professor and Head of the Department of Medicine, will present a paper at the annual meeting of the Association of American Physicians in Atlantic City on the subject of "The Erythrocyte Coproporphyrin Variation in Respect to Protoporphyrin and Reticulocytes in Certain of the Anemias".

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Minnesota Medical Alumni Association and Foundation will Hold Dinner

The Minnesota Medical Alumni Association and the Minnesota Medical Foundation will join in a dinner meeting for alumni of this Medical School to be held in the Spaulding Hotel, Duluth, Minnesota, on the evening of Monday, June 12. The meeting, which will occur during the annual sessions of the Minnesota State Medical Association, will afford medical alumni an opportunity of informal fellowship and the renewal of acquaintances with classmates and friends.

Principal speaker will be Dr. Donald J. Cowling. It is hoped that brief greetings will be given by Doctors Harold S. Diehl, Dean of the Medical School; Dr. Logan Leven, President of the Minnesota Medical Alumni Association; Dr. Edwin J. Simons; and Dr. O. H. Wangensteen, President of the Minnesota Medical Foundation. Dr. Frank Elias, President of the Minnesota State Medical Association, will preside at the banquet. Mr. R. R. Rosell, Executive Secretary of the Minnesota State Medical Association, has graciously assisted in making arrangements for the meeting.

III. UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
CALENDAR OF EVENTS

May 7 - May 13, 1950

No. 288

Sunday, May 7

9:00 - 10:00 Surgery Grand Rounds; Station 22, U. H.

10:30 - 11:00 Surgical Conference; Rm. M-109, U. H.

Monday, May 8

9:00 - 9:50 Roentgenology-Medicine Conference; L. G. Rigler, C. J. Watson and Staff; Todd Amphitheater, U. H.

9:00 - 10:50 Obstetrics and Gynecology Conference; J. L. McKelvey and Staff; M-109, U. H.

10:00 - 12:00 Neurology Rounds; A. B. Baker and Staff; Station 50, U. H.

11:00 - Pediatric Rounds; Erling Platou; Sta. I, Minneapolis General Hospital.

11:00 - 11:50 Physical Medicine Seminar; E-101, U. H.

11:00 - 11:50 Roentgenology-Medicine Conference; Veterans Hospital.

11:00 - 12:00 Cancer Clinic; K. Stenstrom and A. Kremen; Eustis Amphitheater, U. H.

12:00 - 1:00 Physiology Seminar; Aspects of Cancer Biology; Robert A. Huseby, 214 M. H.

12:15 - 1:20 Obstetrics and Gynecology Journal Club; Staff Dining Room, U. H.

12:30 - 1:20 Pathology Seminar; Myocarditis and Poliomyelitis; Paul H. Lober; 104 I. A.

12:30 - 1:30 Surgery Problem Case Conference; A. A. Zierold, C. Dennis and Staff; Small Classroom, Minneapolis General Hospital.

1:30 - 2:30 Surgery Grand Rounds; A. A. Zierold, C. Dennis and Staff; Minneapolis General Hospital.

1:30 - 2:30 Pediatric-Neurological Rounds; R. Jensen, A. B. Baker and Staff; U. H.

4:00 - Public Health Seminar; 113 Medical Sciences.

4:30 - 5:30 Dermatological Seminar; M-436, U. H.

5:00 - 5:50 Clinical Medical Pathologic Conference; Todd Amphitheater, U. H.

5:00 - 6:00 Urology-Roentgenology Conference; C. D. Creevy, O. J. Baggenstoss and Staffs; M-109, U. H.

8:00 p.m. Clinical Research Club Meeting; Electroencephalographic and Neurosurgical Locations of Brain Tumors; Richard Zarling. Differential Diagnosis of small intestinal lesions with intubation studies; Jack Friedman; Eustis Amphitheater, U. H.

Tuesday, May 9

7:30 - 9:00 Fracture Rounds; General Hospital.

8:30 - 10:20 Surgery Seminar; Small Conference Room, Bldg. I, Veterans Hospital.

9:00 - 9:50 Roentgenology Pediatric Conference; L. G. Rigler, I. McQuarrie and Staffs; Todd Amphitheater, U. H.

10:30 - 11:50 Surgical Pathological Conference; Lyle Hay and E. T. Bell; Veterans Hospital.

11:00 - Contagion Rounds; Forrest Adams; Sta. L, General Hospital.

12:30 - Pediatric-Surgery Rounds; Drs. Stoesser, Wyatt, Chisholm, McNelson and Dennis; Sta. I, Minneapolis General Hospital.

12:30 - 1:20 Pathology Conference; Autopsies; J. R. Dawson and Staff; 102 I. A.

1:30 - 2:30 Pediatric-Psychiatry Conference; R. A. Jensen and Staff; 6th Floor, West Wing, U. H.

1:00 - 2:30 X-ray Surgery Conference; Auditorium, Ancker Hospital.

2:00 - 2:50 Dermatology and Syphilology Conference; H. E. Michelson and Staff; Bldg. III, Veterans Hospital.

3:15 - 4:20 Gynecology Chart Conference; J. L. McKelvey and Staff; Station 54, U. H.

3:30 - 4:20 Clinical Pathological Conference; Staff; Veterans Hospital.

4:00 - 5:00 Physiology-Surgery Conference; The Nature of Certain Benign Lesions of the Breast which seem to Arise on the Basis of Hormonal Imbalance and the Relation to Cancer; Cushman Haagensen, of Columbia University; Eustis Amphitheater, U. H.

4:00 - 5:00 Pediatric Rounds on Wards; I. McQuarrie and Staff; U. H.

5:00 - 6:00 Prophyrin Seminar; C. J. Watson, Samuel Schwartz, et al; Powell Hall Amphitheater.

5:00 - 6:00 X-ray Conference; Presentation of Cases by General Hospital Staff; Todd Amphitheater, U. H.

*8:00 p.m. Duluth Clinic Lecture - "Metabolic Effects in Man of ACTH and Cortisone"; J. W. Conn, University of Michigan Medical School; Museum of Natural History Auditorium.

Wednesday, May 10

8:00 - Dermatological Pathology Conference; Todd Amphitheater, U. H.

8:00 - 8:50 Surgery Journal Club; O. H. Wangensteen and Staff; M-109, U. H.

8:00 - 9:00 Roentgenology-Surgical-Pathological Conference; L. B. Thomas and L. G. Rigler; Todd Amphitheater, U. H.

Wednesday, May 10 (Cont.)

8:30 - 9:30 Clinico-Pathological Conference; Auditorium Ancker Hospital.

8:30 - 10:00 Orthopedic-Roentgenologic Conference; Edward T. Evans and Bernard O'Loughlin; Room 1AW, Veterans Hospital.

8:30 - 12:00 Neurology Rehabilitation and Case Conference; A. B. Baker, Veterans Hospital.

11:00 - Pediatric Rounds; Erling Platou; Sta. I, General Hospital.

11:00 - 12:00 Pathology-Medicine-Surgery Conference; Medicine Case; O. H. Wangensteen, C. J. Watson and Staffs; Todd Amphitheater, U. H.

12:00 - 1:00 Radio-Isotope Seminar; Studies on the Effect of Radio Gold on Mouse Leukemia; T. Wang; 113 Medical Sciences.

12:15 - Staff Meeting; Main Classroom, General Hospital.

3:00 - Pediatric Rounds; C. J. Huenekens; Sta. I, General Hospital.

3:30 - 4:30 Journal Club; Surgery Office, Ancker Hospital.

4:00 - 5:00 Infectious Disease Rounds; Basement Amphitheater, General Hospital.

5:00 - 5:50 Urology-Pathological Conference; C. D. Creevy and Staff; E-101, U. H.

5:00 - 7:00 Dermatology Clinical Seminar; Dining Room, U. H.

Thursday, May 11

8:30 - 10:20 Surgery Grand Rounds; Lyle Hay and Staff; Veterans Hospital.

9:00 - 9:50 Medicine Case Presentation; C. J. Watson and Staff; M-109, U. H.

10:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; E-221, U. H.

10:30 - 11:50 Surgery-Radiology Conference; Daniel Fink and Lyle Hay; Veterans Hospital.

11:00 - 12:00 Cancer Clinic; K. Stenstrom and A. Kremen; Todd Amphitheater, U. H.

11:30 - Pathology Conference Clinic; Main Classroom; General Hospital.

11:30 - 12:30 Clinical Pathology Conference; Steven Barron, C. Dennis, George Fahr, A. V. Stoesser and Staffs; Large Classroom, Minneapolis General Hospital.

12:00 - 1:00 Physiological Chemistry Seminar; The Relationship between Niacin and Tryptophane; R. A. Aldrich; 214 M. H.

1:00 - 1:50 Fracture Conference; A. A. Zierold and Staff; Minneapolis General Hospital.

4:15 - 5:00 Bacteriology Seminar; The Production of Industrial Alcohol by the Fermentation of Sugar Beets; Franklin K. Brough; 214 M. H.

Thursday, May 11 (Cont.)

4:30 - 5:20 Ophthalmology Ward Rounds; Erling W. Hansen and Staff; E-534, U. H.

5:00 - 6:00 X-ray Seminar; Presentation of Miller Hospital Cases; Doctors Peterson and Paulson; Todd Amphitheater, U. H.

7:30 - 9:30 Pediatrics Cardiology Conference and Journal Club; Review of Current Literature 1st hour and Review of Patients 2nd hour; 206 Temporary West Hospital.

Friday, May 12

8:30 - 10:00 Neurology Grand Rounds; A. B. Baker and Staff; Station 50, U. H.

9:00 - 9:50 Medicine Grand Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.

10:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; E-221, U. H.

10:30 - 11:20 Medicine Grand Rounds; Veterans Hospital.

10:30 - 11:50 Otolaryngology Case Studies; L. R. Boies and Staff; Out-Patient Department, U. H.

11:00 - Pediatric Rounds; Erling Platou; Sta. I, General Hospital.

11:00 - 12:00 Surgery-Pediatric Conference; C. Dennis, O. S. Wyatt, A. V. Stoesser, and Staffs; Minneapolis General Hospital.

11:45 - 12:50 University of Minnesota Hospitals General Staff Meeting; Adrenal Function in Surgical Patients; Bernard Zimmermann; Powell Hall Amphitheater.

12:00 - 1:00 Surgery Clinical Pathological Conference; A. A. Zierold, Clarence Dennis and Staff; Large Classroom, Minneapolis General Hospital.

2:00 - 3:00 Dermatology and Syphilology Conference; Presentation of Selected Cases of the Week; H. E. Michelson and Staff; W-312, U. H.

1:00 - 2:50 Neurosurgery-Roentgenology Conference; W. T. Peyton, Harold O. Peterson and Staff; Todd Amphitheater, U. H.

1:00 - 3:00 Pathology-Surgery Conference; Auditorium, Ancker Hospital.

3:00 - 4:00 Neuropathology Conference; F. Tichy; Todd Amphitheater, U. H.

4:00 - 5:00 Clinical Pathological Conference; A. B. Baker; Todd Amphitheater, U. H.

4:15 - 5:15 Electrocardiographic Conference; 106 Temp. Bldg., Hospital Court, U. H.

4:30 - 5:30 Journal Club; M-436, U. H.

Saturday, May 13

7:45 - 8:50 Orthopedics Conference; Wallace H. Cole and Staff; M-109, U. H.

8:30 - 9:30 Surgery Conference; Auditorium, Ancker Hospital.

9:00 - 9:50 Medicine Case Presentation; C. J. Watson and Staff; E-221, U. H.

9:00 - 10:30 Pediatric Grand Rounds; I. McQuarrie and Staff; Eustis Amphitheater, U. H.

9:00 - 11:00 Neurology Conference; Psychometric Testing in Neurology; Powell Hall Amphitheater.

9:15 - 10:00 Surgery-Roentgenology Conference; F. Ruzicka, O. H. Wangensteen and Staff; Todd Amphitheater, U. H.

10:00 - 11:30 Surgery Conference; O. H. Wangensteen and Staff; Todd Amphitheater, U. H.

10:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; E-221, U. H.

10:00 - 12:50 Obstetrics and Gynecology Grand Rounds; J. L. McKelvey and Staff; Station 44, U. H.

11:00 - Contagion Rounds; Forrest Adams; Sta. L, General Hospital.

11:00 - 12:00 Anatomy Seminar; Intracranial carotid aneurysms, Harold Brody; Histologic indicators of sex hormone secretion; Howard M. Dale; 226 I. A.

* Indicates special meeting. All other meetings occur regularly each week at the same time on the same day. Meeting place may vary from week to week for some conferences.