

free diet, so that the results are misleading, because one can not tell whether, as Hall points out, the increase is due to an increased destruction of the exogenous moiety or decreased formation of the endogenous purins.

The most satisfactory form of treatment seems to have been the electric-light baths, alone with general dietetic and hygienic measures. With this method of treatment an increase of the output of uric acid was brought about in every instance, even amounting to the normal quantity in some cases. The increase is very striking on the day of the bath in a number of the cases (see table). With this return to normal the symptoms improved or entirely disappeared with the return of health to the patient.

That the dietetic and hygienic treatment was not alone responsible for the improvement is proven by the fact that this increase did not appear until after the baths were commenced, although these measures were instituted when the patient first came under observation.

SUMMARY.

To summarize briefly the results of these investigations:

1. A certain proportion of patients showing nervous and other symptoms are suffering from disturbances of metabolism of such a nature as to lead to an abnormally low output of endogenous urinary purins.

2. Just what these metabolic abnormalities are we can not at present state, because of ignorance of the exact physiologic processes concerned in the formation of the endogenous moiety, but that they are, in a measure at least, responsible for some of the symptoms is shown by the relief of these same symptoms on increasing the elimination of the urinary purins.

3. The best method of bringing about this result is not by trying to dissolve the uric acid, as has been our endeavor in the past, but to increase the activity of the metabolic processes. This latter accomplishment is best attained by exposing the naked body to the direct rays of incandescent electric lights.

OPERATIVE PROCEDURE AS A THERAPEUTIC MEASURE IN THE CURE OF EPILEPSY.

A PLEA FOR A MORE FREQUENT SURGERY.*

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In this paper I use the word "surgery" in its abstract sense, not concretely or connected with sensible objects or in its specific relation to definite things, as the amputation of a limb, the incision of an abscess or removal of a tumor, but rather the impression made on the mind, nervous system and emotions by the immaterial concomitants of the surgical act, as well as the act itself—the combination of hope, fear, expectancy, dread—the impressions and experiences connected with anesthesia, the sinking thought of passing through it into annihilation and nothingness, and all the other feelings of depression and momentary exhilaration known to us who have had personal operative experience.

These things, these mostly emotional things, I believe are the cause at times of recovery from epilepsy, and may thus be regarded therapeutically because they cure just as drugs cure other diseases.

My purpose, then, is to point out that occasionally it may be the conditions connected with surgery—shock when it occurs, impressions on the nervous system, disturbances of vasomotor equilibrium and the like, rather than anything definite that surgery does that causes suspension of epileptic seizures, and that the recovery following surgical operations is not necessarily due to the tangible thing that has either been removed or corrected.

Some patients get well spontaneously; others after removal of the exciting cause, although this is not always the case. In certain persons—apparently acquiring the epileptic habits, as has been said, as a consequence of traumatism, tumor or other neoplasm—the convulsive tendency remains in spite of everything. Cures also are effected by the combined influence of drugs, diet and tranquility; by inducing by ligation an interruption of nervous energy between the skin and nerve centers; in cases of peripheral irritation by removing the exciting cause, etc., yet there is still a considerable number of cures that can not be accounted for except in the way indicated above.

It is probably because of these impressions on the entire system that sometimes, after almost any operation, the convulsions are absent for several months. Even in cases where operations done for other diseases are followed by incidental recovery from epilepsy, such recovery can not always be accounted for by the theory that some cause or source of reflex irritation had been unknowingly cut out or corrected by the operation, as this would be like justification for the ploughing of a field for hidden treasure not likely to be found.

The absence, as far as we know, of a uniform exciting pathology, to be sure, makes anything but conjecture impossible, yet the above hypothesis would seem to explain many otherwise inexplicable restorations. This is the reason for the faith that is in me, not about the cases in which surgery is the only remedy, but in regard to the occasional efficacy of surgery *per se*, so that in otherwise incorrigible cases, after drugs and hygiene under capable hands have failed to produce satisfactory results, on the slightest prospect of recovery, if there is anything at all demanding an operation, I resort to surgery in hope of possible deliverance. Formerly justifiable operations for the cure of epilepsy were limited, by most people, to such conditions as fracture of the skull, with depression, etc., lesions of the brain or nervous system, or where the character of the convulsion indicated the presence of irritation in some specific region, which sometimes seems to bear the same relation to the convulsions that the button bears to the bell—press the button, the bell rings at the other end. Now I at least felt that surgical procedure for almost anything may cause either improvement or recovery, and that an operation for an ingrowing toenail may be as much of a benefit as one for the removal of a tumor from the brain.

The following line of reasoning may sustain my theory: Epilepsy is an apyretic paroxysmal neurosis, its victims neurotics, hence easily impressed. Neuroses constitute the only class of diseases caused and cured by emotional excitement, or psychically and the like, as witness epileptic and asthmatic attacks and paroxysms of dyspnea, excited in neurotics and others by odors, sights and apprehensions, excessive secretion of gastric juice by the blowing of a trumpet, involuntary micturition by the squeaking of a bagpipe. Or again, witness the cures effected on the neurotic by the laying on of hands, the royal touch, by visits to shrines, pilgrimages

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to sacred places; by Christian Science, mental healing, cures affected on the tarantati by the tarantella dance,¹ or again ecchymoses—actual rupture of capillaries and other blood vessels in specific locations—caused by fright or faith acting on an anxious imagination. The communication of the stigmata is an ecclesiastical illustration, said to be supernaturally impressed on the bodies of certain people in imitation of the wounds on the body of Jesus, such as the stigmata of St. Francis, or, again, the deaf hearing, the lame walking, the dumb speaking, the blind restored to sight occasionally, even in our own matter-of-fact, everyday practice, in consequence of emotions and experiences made by conditions connected with certain acts.

These various illustrations of the phenomena of disease accepted as realities are so incapable of explanations founded on visible pathology that in accepting these we do not need to doubt the possibility of an epilepsy, a disease belonging to the same type once in a while being cured in the same way.

Dr. William Carpenter, in his "Mental Physiology," a book that ought to be in the library of every physician, says that so many mysterious things occur within the little universe of man, so impossible of logical elucidation, that the educated person is not in a position to refuse belief in anything.

There are so many cases of recovery from epilepsy following operations, for example, for the relief of cerebral tension, when there was no tension, and the amputation of such parts as we know now had no connection with the cause of the disease, that I know of no other explanation except the one I have adduced.

Take the following illustrations from my own case-book:

CASE 1.—Mrs. B., wife of a druggist, aged 42, had been an epileptic for twenty years, convulsions for the last year averaging six monthly. For three months she had been taking bromid of potassium, 20 grs. 3 times daily in 4 ounces of water; hydrocyanate of iron 1 gr. 3 times daily, with restricted diet. During absence of the cook, Mrs. B., had temporarily assumed her place at the kitchen range. Breakfast being delayed, her son entered the kitchen and found his mother in a convulsion, the first one in ten weeks, with her charred hand rubbing against the bars of a red-hot grate. An amputation under ether was done, and until her death, eight years after, she was free from convulsions, although treatment with epileptic medicine after three weeks interruption, lasted only for a month after the recovery from the operation.

CASE 2.—Louise X., aged 12, an epileptic since her second year, with convulsions averaging for the past year, twelve monthly. She had been under my care three months, during which time she had had but one convulsion. Treatment was bromid of strontium, 6 grs. four times daily in 4 ounces of water. Infusion of digitalis a teaspoonful three times daily on alternate days, with restricted diet, and protection from excitement. After a bath on a hot summer day her nurse placed her on a slipper box in front of an open third story window, went into an adjoining room for fresh clothing, and when she returned the naked child had disappeared through the opening, falling with such force on a wooden fence as to break it. An hour later I found her on a sofa in the parlor, excited, confused, with a deep laceration on the outer surface of her left thigh about 4 inches long, which, after washing and being brought together with stitches, under ether, she was put to bed. There were no broken bones. Until the family left the city four years after, the child was free from convulsions, the accident leaving no result except a scar.

CASE 3.—Margaret C., aged 9, an epileptic since her second year, with an average of three fits monthly, convul-

sions slight, short, almost psychic. She was but slightly benefited by a treatment of bromid of strontium and infusion of digitalis, and adapted diet, and the treatment became frequently interrupted and finally was suspended altogether. Two years after, she returned with the spells more frequent, but with a bunch of tuberculous glands in the right surgical triangle extending up toward the ear. Three years after their extirpation under ether she is still exempt from convulsions and is entirely normal. In this case no epileptic medicine was given after operation.

It is such cases as these and others somewhat similar that have convinced me of the occasional benefit of almost any kind of surgery in epilepsy. The combined concomitants of the operation, its awe, impressiveness and solemnly, as well as the act itself, acting psychically on temperaments or minds specially susceptible, as in the historic cases mentioned in the beginning of my paper. I think this interpretation may be applied also to many of the cures effected under the direction of Brown-Séquard, and that his claim of the removal of "peripheral irritation" could not now be applied to many of them.

The same may be said of the numerous cures claimed by the advocates of the once popular Corsican remedy—cauterization with a red hot iron behind the ears. This popular site of reflex agitation, then, could hardly, like the residence of an exiled prince, have been relegated by the medical powers that be, to some more remote location. Fashions may influence diagnosis but not pathology.

I think the same analysis may be applied to the many cases reported by Baker Brown, M.R.C.S. Indeed, this surgeon was so successful in producing recoveries in epilepsy that his society, the Royal College of Surgeons, thought he was getting up a corner in cures and disciplined him. Mr. Brown was convinced by Brown-Séquard's "Lectures on the Physiology and Pathology of the Nervous System" and his theory of peripheral irritation that great mischief was caused to the system in general, and the nervous system in particular, by such excitement. He decided consequently that epilepsy was due to "storm" of the "pudic nerve," mechanically induced or rather that branch of it supplying the clitoris.

Subcutaneous division of the nerve not being sufficient to effect a cure, Mr. Brown finally subjected his deduction to a more heroic surgical test by removing the clitoris altogether. His amputations were done with a pair of scissors, afterward plugging up the scar with lint. In a month the wound was healed and great numbers of patients were restored to health completely, "with all the vital powers greatly strengthened." He reported many cures six and seven years after operation, and patients still free from spasms. For a time he had many followers, when fashion again changed the habitat of the disease, this time to its former exalted location in the interior of the calvarium. Since then, besides the *cures célébrés* following removal of actual tumors, etc., from the brain, Dr. J. Wm. White, in the *Annals of Surgery*, in the two articles entitled "The Supposed Curative Effect of Operation *per se*," reports "extraordinary results from operations which proved to have no justification in a discoverable pathologic condition." He records ninety cases, in which trephining was performed, no lesion found, nothing in particular done, and yet marked relief and complete cure followed.

Drs. Agnew and White record the case of a man "greatly epileptic" who years before received a blow on the head. Trephining was done and nothing abnormal was found. Eighteen months after operation he was still without convulsions.

1. See De la danse de Saint Guy du XIV au XVII Siecle, by E. S. Albans, Paris, 1872; also the author's article, Mimetic Diseases, Jour. of Zoopholy.

J. H. Hamilton reports the case of a man aged 18 who had had fits from childhood, one or two daily. The right common carotid was tied, which diminished the fits in force and frequency. He had no fits after the second operation, which consisted of ligature of left carotid. This article also records instances in which permanent recovery followed tracheotomy, incision of the scalp, and amputation following dislocation of a bone of the great toe. Cures have also followed lithotomy, nerve section, nerve and muscle stretching and removal of cicatrices.

Dr. S. E. McKenly, in the *American Medical Gazette*, has reported the case of a boy aged 16 who, after having been an epileptic for years, fell through a bridge and had one testicle crushed. It was removed, and at the last report, six years after operation, there had been no fits.

William H. Carr reported the case of a man aged 24 who had had fits for seven years, averaging three weekly. The operation of tracheotomy was performed for another disease and he had no fits afterward.

In ten cases of castration for epilepsy all were helped and four reported cured two years after the operation. In twenty-four cases of removal of the superior cervical ganglion of the sympathetic nerve six patients had remained well at the end of two years, ten were improved and five remained in the original condition, two died soon after the operation. Twelve cases of epilepsy are reported as cured by such operation as stretching of the sciatic nerve, cauterization of the larynx, circumcision, application of setons to the back of the neck, tenotomy of external recti, burning of scalp, etc.

All of these recoveries seem capable of the explanation given in the beginning of this paper and constitute it would seem a claim for a more frequent surgery, but a surgery in which epileptologist should cooperate with the surgeon.

PSYCHASTHENIA: ITS SEMEIOLOGY AND NOSOLOGIC STATUS AMONG MENTAL DISORDERS.*

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The attempt to obtain recognition for anything approaching a clinical innovation in the realm of nervous or mental diseases is an herculean task. Among the rank and file of the profession such a movement naturally meets with the stolid indifference which is the lot of practically all phases of mental science; while among alienists and neurologists it encounters a curiously combative attitude, which is strikingly exemplified in the struggle experienced by psychasthenia in gaining recognition as a nosologic entity.

There is, however, a growing desire, born of necessity, on the part of neurologists, to limit the semeiologic scope of the old term *neurasthenia*. It is admittedly too vague, too clumsy—a mere diagnostic peg on which to hang symptomatic chains composed of heterogeneous links—and yet substitute terms, *psychoneurosis*, for example, are equally unhappy, because of their absurd overcomprehensiveness and fatal lack of nosologic focus.

It would seem from the foregoing as if any term which has caused to crystallize solidly around it interrelated

morbid psychic phenomena of presumably identical origin were worthy of general acceptance and a sheltering niche in nosology.

THE PHENOMENA OF PSYCHASTHENIA.

In approaching a case of psychasthenia, the first thing that impresses the clinician is that he is dealing with an idea of peculiar character. It is neither volitional nor practical; it does not represent an intellectual advancement; it is not concrete and does not lead to useful and satisfying achievement; lastly, it can not be submerged to the level of the subconscious like an ordinary idea. On the contrary, it is vague, abstract, insistent, monotonous; it is an incubus, an obsession, which fastens on the mind of its victim and goads it to that particular type of frenzy—characterized by the impulses, mental manias, *folies du doute*, tics, agitations, phobias, deliria of contact, anxiety and bizarre feelings of strangeness and depersonalization—which we are about to study.

In attempting to ferret out the obsession or obsessions that are at play in the particular case, the examiner meets with difficulties which are peculiar to this disorder. These difficulties are twofold; they arise in part from the unwillingness of the patient to admit that he harbors ideas recognized by him as wholly absurd and out of harmony with the normal working of his mind, and in part from his inability—either real or imaginary—to express himself intelligibly, consecutively and completely.

In spite of these drawbacks, it will be found that obsessions are of five general classes: obsessions of sacrilege, of crime, of disease, of shame of self and of shame of the body.

OBSSESSIONS OF SACRILEGE.

The obsessions of sacrilege merit particular attention, for they are of a character so monstrous, so unthinkable to the healthy mind, so diabolically whimsical, that even the trained psychologist stands aghast at the avowal of such weird vagaries of human thought. The central, torturing ideas in this form of obsession are that the most sacred imaginable objects may be or really are, by desire or act of the patient, brought into juxtaposition with the most loathsome; that the Deity is reviled and Satan exalted. It is noteworthy that these obsessions rarely exist *ab origine*, but mark a rather advanced stage in the evolution of the case.

OBSSESSIONS OF CRIME.

Obsessions of crime, in feebly-developed cases, may be of a purely speculative or philosophic order, the patient limiting himself to abstract considerations on the nature of good and evil, crime, evil-doing, punishment, law and so forth. Such speculations are harmless enough when indulged in by the normal person and utilized in the government of his own conduct. In the psychasthenic they are troublesome, because he endeavors, as a result of them, to govern the conduct of his entourage. In the majority of cases the obsession is not so innocuous, since it exists in the form of impulses to commit criminal acts. The impulses to rape, to murder, to commit suicide, to inflict self-mutilation (particularly of the genital organs), to perform unnatural sexual acts, to lie, steal, rove, to eat and drink inordinately, to do the opposite of everything dictated by a sense of duty, are among the commonest.

The impulse is never to accomplish these crimes in a commonplace way. In each case the act must have its peculiar stage-setting, conceived with a wealth of detail that is often astonishing.

* This article was prepared for the Section on Nervous and Mental Diseases of the American Medical Association, but not read. It is here abbreviated, but the complete article appears in the author's reprints.