

INSANITY FOLLOWING SURGICAL OPERATIONS.

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In presenting some thoughts on insanity as a sequel of surgical operations I wish at the outset to remark that in such cases an operation is almost invariably to be regarded as only one of several factors, and that in and of itself an operation can scarcely cause insanity—since a large number of other circumstances is nearly always to be taken into account as contributing to the result—and the value of my paper, so far as it has value, will be in aiding toward a better estimation as to what cases of operation are in danger of being followed by insanity, and what safeguards may be adopted to avoid so untoward a result.

This subject is one which formerly received little or no attention. Five years ago, when I presented to the American Medico-Psychological Association a clinical history of a large number of cases ⁽¹⁾ collected from colleagues and encountered in my own practice, the matter seemed practically new to the profession at large, though some striking studies of the same sort had been presented in England and by Continental writers, and at least one in the United States. A year later I presented a tabulated series of cases ⁽²⁾ in the Chicago Medical Society, and at the St. Louis meeting of the American Medico-Psychological Association, which aroused rather animated discussion. There were 46 cases in the table—8 of my own and 38 communicated to me by colleagues. Since that time with increasing frequency cases have been reported. The previous studies referred to were those of J. C. Simpson of Edinburgh, who presented a comprehensive clinical and statistical study of "Post-Operative Insanity," ⁽³⁾ and of Moyer, who discussed it ably in a paper, "The Nervous and Mental Phenomena following Operations." ⁽⁴⁾ Doubtless other early studies would be disclosed by a full

(1) Transactions of the American Medico-Psychological Ass'n, '97,—"Insanity following Surgical Operations," page 239.

(2) Transactions of the American Medico-Psychological Ass'n, '98,—"Some Remarks on Insanity following Surgical Operations with Report of 46 cases," p. 223.

(3) Journal of Mental Science, Jan., '97.

(4) Medicine, June, '97.

review of the literature for numerous cases, and reports have appeared since attention was directed to the subject, and very recently an editorial in the *Journal of the Amer. Med. Ass'n* (5) occasioned by a paper of Dr. O. B. Will (6) has emphasized the importance of attention to the mental state by the surgeon when contemplating an operation. I therefore venture to bring the subject forward at this time, quoting to some extent from my former article, and presenting some new cases.

In estimating the relation between insanity and surgical procedure some of the elements that must be taken into account are the following: First, the patient's condition and heredity; for it should be understood (though it seems not to be generally appreciated by the profession) that almost all who become insane from any exciting cause have in themselves a deeper seated predisposing cause, to-wit: their own constitution and inheritance. In other words, no possible combination of outward circumstances will produce insanity in certain temperaments and constitutions (there may be real or apparent exceptions to this statement where certain toxic conditions from auto-toxins or drugs operate to produce delirium, though even the tendency to delirium is often a matter of neuropathic constitution), because the predisposition to insanity is lacking, while comparatively slight causes will suffice in an unstable or neurotic temperament.

In all cases then the neuropathic constitution is to be taken for granted, as *sine qua non*, and this being given, one or more of the following may complete the chain.

1st.—The patient's physical condition at the time, including constitutional disease, like arterio sclerosis, kidney or heart complications, and anæmic or toxæmic condition from the above or other causes; also sepsis growing out of the puerperal state, or in operations on the genitalia, where antiseptic conditions are unattainable.

2nd.—An especially important condition at the time of operation may be the mental state of the patient. The presence of a neurasthenic or psychopathic state or tendency, also the hysterical diathesis, also depressing emotions, as anxiety, fear, etc., to a pathological degree (though, of course, always present to some extent), are now recognized as exceedingly important in their influence, as cases cited will illustrate.

* Mental shock, analogous in its effect on the mind to physical shock on the body.

(5) *Journal Amer. Med. Ass'n*, Nov. 1, 1902.

(6) *Peoria Med. Journal*, Oct. 1902.

* Dr. Will in certain cases would avoid operating on Friday, recognizing the real importance of a hopeful and confident state of mind in superstitious patients.

3rd.—The effect of the anæsthetic. It is not necessary to cite the various ways in which the anæsthetic may depress or injure the brain or nervous system directly or indirectly.

4th.—The effect of drugs aside from the anæsthetic. Drug and alcoholic addiction of long or short duration. The effect of sedatives or narcotics often given in large quantities in connection with the patient's state (hyoscine, morphine, cocaine, etc.). Formerly atropine in eye operations undoubtedly at times caused or intensified delirium. Here belong also the possible effects of dressings used on the wound. Iodoform has more than once been recognized as a cause of delirium and insanity, and bichloride and carbolic solutions may also be toxic in their effect.

The data which are desirable in order to study and elucidate insanity occurring after operations are the following: 1st. The age, sex, occupation, habits, residence, civil conditions, and nativity. 2nd. Any material facts relating to injuries or disease affecting the patient bodily or mentally prior to the operation, and the condition—physical and mental—at the time of the operation. 3rd. The usual data of the operation—its nature and extent, the duration of anæsthesia and of operation, the kind of anæsthetic used and how borne. 4th. The dressing used, and the process of healing. 5th. The length of time after operation before mental symptoms appeared and the form they assumed. 6th. The duration and outcome of the mental disease. 7th. The hereditary tendencies, if any.

Some of the related conditions I have found to be present in my studies of these cases may be summarized as follows: Insanity in a neurasthenic patient developing from the use of an anæsthetic alone without operation; also after trivial operations. Insanity from traumatic causes, not directly affecting the brain (as fracture of a bone), both with and without operation. Change in the *form* of mental disease after an operation. Apparent recovery from insanity after anæsthesia for uterine examination. Reversion of insanity after castration. Insanity probably from vascular disease, though excited by an operation. Insanity after perineorrhaphy with sepsis, mental worry, neuropathic taint, diabetes, and eczema—all operating together in a patient previously a victim of morphine habit many years before. Also a case of insanity after perineorrhaphy in a healthy woman—apparently from anæsthetic and deprivation of water—all these cases taken together serve to illustrate how complex a problem is insanity presenting itself after operations.

Some of the elements or factors of these cases may now be considered. One of the first relates to the *kind of operation*. Experience

has raised the question whether some classes of operation are not more likely than others to be followed by insanity—as operations on the genito-urinary organs or alimentary tract. First, because these operations in some cases cannot be wholly aseptic, e. g., operations for lacerations, urethral, vesical, and rectal operations. Second, some of these are operations depriving the economy of the essential organs—the ovaries and testicles, loss of these latter being important from their influence on bodily nutrition and metabolism, and likewise the mental effect upon many men and women of deprivation of what to them seems an essential part of manhood and womanhood. Third, the implication of the peritoneum with greater accompanying shock. Another class of operations in some cases liable to be followed by mental symptoms as would seem, are eye operations, especially for cataract—perhaps from closer proximity and relation of eye to brain as well as from the effect of atropine. Another operation in which tendency to mental disturbance is disproportionately manifested is that for mammary disease, both malignant and non-malignant. In the 46 cases of my table, 4 were cases of carcinoma of the breast, and excepting operations on the generative organs, no other form of operation was as frequent among the cases collected by me.

In reference to the other operations in my table I would say of the 46 cases, 29 were operations on the female genitalia, and of the whole number only 6 were located anywhere outside of the genito-urinary or alimentary tracts. Only one of the 46, however, was an eye operation. In regard to the development of insanity after ovariectomy one may remark that a certain contingent of these cases consist of highly neuritic women, naturally prone to insanity, in whom any profound disturbance of nervous relations may produce it. It is a question often of accident as to whether insanity follows an operation or an operation follows insanity, undertaken as the operation often has been, with the hope of cure. Such patients on the one hand may be operated upon to relieve insanity, and on the other hand, may be thought to have been made insane by operation, while the most efficient factor is lost sight of in both instances, viz., the *nervous instability* of the subject.

A remark made three or four years ago by Dr. Paul Mundé at a meeting of the New York Society of the Woman's Hospital, may here be quoted, "The results of oophorectomy in insane women have not been favorable." (7)

In five of the cases in my table the insanity was present imme-

(7) American Gynecological and Obstetrical Journal, Jan., 1898, p. 55.

diately at the end of anæsthesia, though this does not prove the anæsthetic to have been the cause, and in eleven of my cases the anæsthetic was said to have been "well borne." It is to be regretted that the length of the anæsthesia is only given in nine of the cases. In three, it was one-half hour; in two, three-fourths of an hour; in one, one hour, and in one, ninety minutes.

The question of the influence of sex naturally presents itself. On first examining the question the striking preponderance of women over men is apparent. In the table of 46 cases, only 4 are males, though these cases are gathered from private practice and from institutions receiving both men and women, and only 6 of them came from a purely gynæcological practice. Sears ⁽⁸⁾ of Boston found that of 167 cases, 102 were women, but if strictly gynæcological cases were excluded, there was little difference in the sex affected. He found on the other hand that in 59 eye cases, only 24 were women. Similar was the experience of Kiernan, of Le Denty and of Simpson, from whom I quote the above figures. ⁽⁹⁾

It would seem that the reason for the preponderance of these cases in women was simply the very large proportion of gynæcological operations, and if the genital organs of men were as frequently operated on, the number of such cases in each sex would perhaps be quite nearly alike.

As to septic and toxic causes it may suffice here to recall the fact, that in patients in a septic state from any cause previous to the operation, or in operations on perineum, rectum, etc., there may be an autotoxis of brain producing insanity. Also in this category belong cases where toxic absorption from the dressings occurs. There were six cases where iodoform appeared to be an important factor. In one case (an operation for cancer of the breast, done by Dr. Christian Fenger), the dissections were very extensive and iodoform was lavishly used, and other causes for insanity seemed to be lacking.

The *mental condition previous to the time of operation* is a thing scarcely taken into account by surgeons, and I suppose all who have had much experience with insanity have seen cases in which it really existed before the operation, either actually or potentially, without being recognized; like one patient who had delusions actively developed before the attempt at curettage and went wildly insane with the first whiffs of the anæsthetic. This patient regained her mental health during a few weeks under my care, and the operation was then successfully done. Several factors were here concerned—a debilitated bodily

(8) Boston Medical and Surgical Journal, 1893, page 642.

(9) Journal of Mental Science, Jan., 1897.

state, great fear and apprehension, and finally the anæsthetic. The case further illustrates how under more favorable circumstances the same operation, which in the first instance came out so unfortunately, may be done upon the same individual without evil results.

I give now some facts learned in the course of my study in 1898. Dr. Fred'k Peterson, of New York, had observed a number of cases, three-fourths following ovariectomy and several after simple operations like anæsthesia for extracting teeth. He thinks the mental state was largely due to the anæsthetic. In this connection I may mention Dr. Granger's case of a woman who after ether for pulling teeth became insane and killed her child; also a case of my own of insanity following cocaine locally and the extraction of 23 teeth in a hard-working merchant of 65, with thickened radials and incomplete arcus senilis, married, six healthy children, good habits, no neurotic heredity, or venereal disease. Patient was never the same after the cocaine, failed mentally, became gay, disposed to drink and erotic, irascible and inclined to wander about, finally becoming maniacal and confusional. Dr. E. C. Dudley, of Chicago, had two cases occurring after operation done about time of menopause—both recovered. One was perincorrhaphy and trachelorrhaphy; the other removal of right ovary and tube. Dr. Dudley does not think insanity follows gynæcological operations oftener than others. Dr. J. W. Streeter, of Chicago, in 500 laparotomies and 100 vaginal hysterectomies had no case of insanity. In a few cases he operated on pelvic organs for insanity, but did not find positive cure resulted. Dr. Bayard Holmes, of Chicago, reported one case from a large gynæcological practice. Dr. A. J. Ochsner, of Chicago, from an extensive surgical practice, reported four cases of insanity and three others previously insane and recovered in which a relapse occurred after operation. Dr. J. B. Murphy, of Chicago, had not had insanity occur after operation. Dr. N. Senn, of Chicago, wrote me he had never encountered a case of insanity that he could attribute to an operation. Dr. John Ridlon and Dr. A. E. Hoadley (orthopædic surgeons of Chicago) had seen no cases. Dr. Jos. B. Bacon, of Chicago (rectal surgeon), reported that he did "not operate on cranks." In closing I add here two cases not heretofore reported.

Case 1, Mrs. W. In November, 1901, I saw in consultation in a hospital in Milwaukee a married woman, 35 years of age, a highly neurotic individual, who had a sister of the same constitution, and who had previously been under my care. This patient's father was asthmatic and rheumatic, and died at 40 of lung congestion. The mother died at 30, having been ill with some pelvic complication for a year after confinement. Patient had three children living—one affected with nocturnal enuresis—and had had two miscarriages. She

was always nervous, and, when a child, subject to night terrors; married at 16, had miscarriage in fourth month at 17, very sick and always nervous after. Seven weeks previous to my visit had miscarriage; had come to hospital for treatment for menorrhagia, had curettement. Salpingitis developed later, and both tubes were removed. Operation well borne as far as physical symptoms were concerned, but great restlessness and anxiety developed. Patient was constantly in fear of going insane and had great precordial distress, thought she was going to die, was in almost constant state of frenzy for some days, was then removed to Sanitarium, and under appropriate treatment speedily improved and in six or seven weeks was usually well, but still, of course, highly nervous.

Case 2, Mrs. R., aged 43, married, three children, healthy but neurotic. Father insane some years ago, recovered. Mother neurotic. Maternal aunt had puerperal mania. Patient said to have had "hip disease" at 14, but recovered. Had an attack of hysterical mania lasting two months four and a half years ago following severe attack of la grippe, which seemed to be the exciting cause, was suicidal, refused food, had delusions of poison, also erotic excitement, falling into stuporous condition at times, hallucinations of sight and hearing. Came under my care in Sanitarium, and in one month made good recovery; was well three and one-half years, but for a year previous to coming again under my care had suffered from menorrhagia and developed symptoms of nervous exhaustion. Menorrhagia persisted for several months. Examination showed uterine fibroid. Abdominal section was made and uterus and ovaries removed in November, 1901. Ether was the anæsthetic; the operation was tedious and one and one-half hours long. Patient suffered much from shock and pain for two weeks, then mental confusion and delusions appeared. Lost sense of locality, seemed to go through pangs of confinement and thought child was in bed with her. Would have lucid intervals for a time. In January grew worse, hallucinations of sight and hearing were marked, erotic excitement present also, delusions of persecution, then taking a religious turn. At end of January admitted to Sanitarium: thought herself a queen and her physician emperor. At times very irascible and abusive, sleep broken, hypnotics required, appetite capricious, regardless of personal appearance (though most fastidious when well), thought people about were bad characters. Gradually became more rational. February 8th clear on most subjects but a little grandiose, thought her voice finer than ever before, sang in parlor, in recitative style a poem from a magazine, but steadily and quite speedily returned to normal self. February 16th, '02, was quite herself again, returned home and has since remained well to date (November, 1902).

Both of these cases show the numerous complications, one or more of which are apt to be present when insanity develops after an operation.

I wish to close by laying stress on one therapeutic indication to be drawn from the foregoing facts, and that is the advantage to be gained to the patient from careful attention—on the part of the surgeon—to the nervous and mental state of the patient, and to conditions that may

possibly cause the development of insanity. Some of these are: Marked neuropathic or psychopathic heredity, a condition of nervous shock, stress or anxiety, hysteria, any toxæmic condition, malnutrition or anæmia, a previous attack of neurasthenia or insanity which may be overlooked unless inquired into, the existence of alcoholism or drug habits.

At the time of the operation the anæsthetic may be badly borne, or kept up so long as to be injurious. The dressings also may be harmful, especially if iodoform is used over large surface.

It is true that cases of insanity after operation are few and far between—also that the operation is only a remote cause, nevertheless the occurrence of these cases is most undesirable and may sometimes be forestalled by carefully estimating the conditions or taking the precautions which prudence would dictate, and often there are cases in which the surgeon would do well to have the advice of an alienist, at least until the subject of insanity is more thoroughly taught than is at present the case—even in the best of our medical schools.