

ENHANCEMENT OF PHYSICAL AND MENTAL CAPACITY
FOLLOWING TREATMENT OF CHRONIC
INFECTIVE DISEASE.*

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It is now a little over twelve months since the investigation and treatment of chronic infective disease was undertaken at this hospital, made possible by the erection of a treatment centre and the appointment of an ear, nose and throat surgeon. From what I have seen of the results obtained during the period under review I am convinced of its therapeutic value, not only in recent cases of psychosis where other forms of treatment have failed, but also in chronic cases, which my clinical experience would have pointed to as hopeless, has amelioration taken place.

It is now being more fully realized that many patients in the early stages of mental disorder are manifestly in poor physical health, showing among other somatic conditions toxæmias associated with circulatory disturbances. They are ill in body as well as in mind, and in need of rest and treatment to aid and promote their recovery. The work carried out by Graves and Pickworth in this country and Cotton in America on the relationship of mental disorder to chronic infective disease, demonstrating the importance of the presence of septic foci and their accompanying toxæmias as causal factors of the psychoses and the necessity for locating and eliminating these conditions, has brought into the realms of psychiatry a wider and closer application of medicine and surgery and, in my opinion, constitutes a definite advance in the treatment of mental disorder.

Chronic infective disease may be present for years without giving rise to any local symptoms so long as the immunity or resistance of the patient can tolerate the infection; when, however, that resistance becomes lowered, as for instance by an attack of influenza, the prolonged deleterious effect of the toxins on the physical and mental conditions of the patient becomes apparent in the reduction of capacity for work, and in the onset of mental symptoms passing on to acute mental disorder and even to suicide. The case of E. M. C—, of which details are given later, is illustrative of this course of events.

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In our efforts to improve the mental and physical health of our patients, I regard it as essential that all new admissions should be examined by the dental and the ear, nose and throat surgeons for the presence of oro-naso-pharyngeal sepsis, and that all treatment necessary should be carried out as soon as is advisedly possible. It is not my intention to make any reference here to the actual technique involved in the diagnosis and treatment of septic foci, or of the bacteriology and pathology concerned, on which much valuable work has been done by Pickworth, but to stress the importance of their early recognition in view of their latency.

The declaration of the Board of Control on the incidence of dental sepsis has been confirmed by our observations, improvement, both mental and physical, having resulted following treatment. Of our recent admissions 90% have been found to require treatment for dental sepsis, and many of these exhibited the presence of toxæmia with impaired peripheral circulation, loss of muscle tone and nerve irritation. X-ray examination of the jaws has been carried out in the diagnosis, and confirmation, of the presence of unerupted teeth, buried roots, etc.

That unerupted and impacted teeth are primarily responsible for acute and very intense psychotic states has been proved by our experience of these cases, their removal being followed by recovery and discharge, or by amelioration of the mental condition. The cases of M. H— and G. R—, summaries of which follow, are illustrations of recovery consequent on the removal of unerupted wisdom teeth.

During the past thirteen months 132 patients have been examined by the ear, nose and throat surgeon. Naso-pharyngeal sepsis was found to be present in 106, or 80% of these cases; of these, 70 (males 29, females 41) have up to the present time received operative treatment, which was not possible in the majority of the remainder because of age, physical condition, premature departure and refusal of consent to treatment. The removal of tonsils by dissection for peritonsillar and encysted abscesses, chronic hypertrophy and chronic cryptic disease, etc., was undertaken in 57 cases, and infected adenoids were dealt with in 9 cases. General sinus examination by the Watson-Williams technique was made in 21 cases, pus being located in 3 instances; the washouts in several cases suggested infection. The comparatively small number of infected sinuses discovered can most probably be accounted for by the fact that many of our patients come from the country, and are not subject to the adverse conditions, from the point of view of infection, prevailing in the densely populated industrial areas. All the cases treated were, with the exception of 5 mental defectives, suffering from psychotic conditions, including 21 cases of dementia præcox, but there were no cases of insanity associated with epilepsy or general paralysis. The removal of infected tonsils and adenoids in one of the defectives, who for years had been constantly restless and troublesome, was followed by improvement in general health and conduct, and increase

in weight. The duration of mental disorder in approximately one-third of the cases treated was of two years and over.

The results obtained in the treatment of the 21 cases of dementia præcox have been encouraging, and, in my opinion, fully justify the removal of septic foci in this condition, mental and physical improvement having taken place in 7 and mental or physical in 4 others. Though the improvement has not been sufficient to allow of discharge, as yet, in more than one case, they are more tractable individuals.

Illustrations of mental and physical amelioration following treatment in dementia præcox are those of cases of C. V. P. M— and B. M. L—, summaries of which are also given.

Satisfactory results, both mental and physical, have been attained by the use of non-specific therapy in the treatment of chronic infective disease, particularly in association with operative procedure, with the object of reducing absorption from infected and diseased areas and lessening toxæmia. T.A.B. vaccine given intravenously and colloidal sulphur intramuscularly have been the agents employed. Where this treatment has been administered apart from operative procedure definite improvement has also ensued. In some cases sedatives, which had previously been necessary, were entirely dispensed with, and patients have volunteered the statement that they began to get better after "the injection". Antistreptococcal (scarlet fever) serum, acting more in the way of a specific, and protosil for its antibacterial properties have shown beneficial results in reducing toxæmia and in hastening healing.

Continuous irrigation has been used with success in the treatment of toxæmia, so often evident in newly-admitted patients, and has become almost routine where the co-operation of the patient can be obtained. The beneficial results following its administration are seen in improved appetite, lessened restlessness and better sleep.

Having referred to the percentage of cases in which, on investigation, as so far carried out, sepsis was found to be present, and also to the methods of treatment, a summary of the results obtained in the treatment of 70 cases of chronic infective disease is given in the following table :

	Discharged.			Not discharged.		
	Males.	Females.	Total.	Males.	Females.	Total.
Mental and physical improve- ment	4	11	15	10	9	19
Mental improvement only . . . . .	..	..	..	2	..	2
Physical improvement only . . . . .	..	..	..	4	4	8

All the cases discharged (15) were, with one exception, regarded as recovered, and none have been readmitted. Each had gained in weight and showed other indications of physical improvement. It is significant that more than

half of these patients expressed thanks for their treatment, and voluntarily stated that their recovery dated from the time of operation. These voluntary statements are of value in that they confirm the clinical progress often observed after the removal of septic foci.

The discharge of 5 males and 5 females of the 19 cases shown in the above table as exhibiting mental and physical improvement is contemplated.

The results of treatment of 70 cases stated in percentage are : Discharged, 21% ; mentally and physically improved and still in residence, 27% ; total, 48%. If to this is added the number showing either mental or physical improvement the total is then 62%.

As only results relating to those actually treated have been given, the question that naturally arises is what changes have taken place in the remaining 36 in whom oro-naso-pharyngeal sepsis was present and was not treated. An inspection of these shows that one, a syphilitic, was discharged recovered, 2 were discharged relieved, 3 voluntary patients left prematurely and 2 have died. The mental and physical states of the others remain practically unaltered.

Though the work carried out at this hospital in the treatment of chronic infective disease as a causative factor of mental disorder has only covered a short period, the clinical experience gained has produced sufficient evidence to lead me fully to realize that there is a definite and important relationship between mental disorder and chronic infective disease, and to such an extent that I would more than hesitate to undertake the treatment of mental disease without first availing myself to the fullest possible extent of this means of treatment, or to undertake any other form of treatment until I was satisfied that the patient had first been examined and treated for, or had been found to be free from, chronic septic infection ; by this means formidable obstacles to recovery are overcome.

The following are summaries of the cases referred to, and others, illustrative of enhancement of physical and mental capacity consequent on treatment of chronic infective disease.

CASE I.—*Acute melancholia associated with septic sphenoidal sinusitis.*

E. M. C—, female, single, aged 31, nurse. Admitted June 19, 1937, from another hospital. Date of certification, November 24, 1936.

History.—Family history good. Developed influenza while nursing at the British Hospital in Paris—eighteen months before her admission here. She felt "giddy", "had terrible pains in the head" and, as a result, became intensely depressed and suicidal. Her appendix was then removed and she was sent to England for a holiday. It was then noticed that her pupils were unequal and an eye specialist prescribed glasses for her. After some months she returned to Paris. She states : "I was still depressed, but I was afraid of losing my job. A few days after I got back my great friend—Violet—got influenza, and one day, as I was walking in the garden, I found her lying crushed and bleeding, and dead at my feet. She had committed suicide by jumping out of a window, and that was what I had wanted to do myself." As the result of this shock her depression became worse, and her head pains were so severe that a cerebral tumour was

suspected and she was taken into a London nerve hospital for investigation. All her thoughts were now centred on one desire—to join her friend Violet. She jumped through a window, fractured both wrists and was sent to a mental hospital near London. She now began to see and hear her dead friend Violet, who appeared to her regularly, and who never ceased to describe to her the beauty and peace of death.

Condition on admission.—Mental state: Miserable and depressed. Spent most of her time weeping. Intelligent and courteous, but utterly devoid of insight. Discussed her hallucinations and desire for death quite frankly. Greatly distressed by her head pains.

*Physical condition.—*Facial tic on left side. Left pupil larger than right. On transillumination her antra were black. No other abnormality noted.

*Progress.—*Two days after admission she became wildly excited and confused, homicidal and destructive, and hyoscine was required. Next day she was quiet and miserable, she apologized for the outbreak and explained that "Violet" had told her to behave in that manner.

On August 1, 1937, she was still very depressed, and described her head pains as "a boring pain behind the right eye". She was now given a course of continuous colon irrigation, and following this her visual hallucinations disappeared, and she was much less depressed.

On October 10, 1937, she developed pharyngitis and her hallucinations and depression recurred.

Following upon X-ray examination of her sinuses a general sinus examination was carried out on October 29, 1937. Her right sphenoid was found to contain copious thick pus and a right antranasal sphenoidostomy was performed. Following upon this all her symptoms became more marked, and on January 7, 1938, her right sphenoid was again washed out. This was followed by prontosil, antistreptococcal serum and a course of intramuscular colsul. A temporary improvement was again followed by a relapse and on March 4, 1938, her sinuses were X-rayed after the introduction of lipiodol.

On March 18, 1938, her right sphenoid was once more washed out, and thick,ropy strands of pus evacuated. The anterior wall of the sinus was removed, and this was followed by daily irrigation.

There was an immediate and dramatic change in her condition, and her mental state at the moment appears to be normal.

CASE 2.—A case of melancholia with recovery following removal of an impacted unerupted wisdom tooth.

M. H—, female, aged 27, clerk. Admitted as a voluntary patient July 30, 1934.

*History.—*A grandparent was insane. The patient was a perfectly normal, quiet, reserved type of girl until three months before her admission. Following upon an extremely tactless explanation of "the facts of married life" from an excitable mother (she was to be married in October, 1934), she gradually became more and more depressed, found herself unable to bear the thought of married life and broke off her engagement. She became excited and agitated, and suicide was feared.

Condition on admission.—Mental state: Quiet, miserable and depressed. Evincing no interest in her environment. Felt tired, was unable to concentrate, was obsessed with ideas of wickedness. Believed she had ruined her fiancé's life by breaking her engagement. Regarded the idea of marriage and sex with intense horror. Everything felt strange to her and affective loss was marked. Introverted and asocial. Stated that she had attempted suicide by strangling before admission.

*Physical condition.—*Very poorly nourished. Anæmic. Presence of an endocrine dyscrasia suggested by an enlarged thyroid, hair on her chest, masculine type of pubic hair, small pelvis, etc. Tonsils large, but no pus present. Marked halitosis. Poor appetite. Severe constipation. Complained of dyspepsia. Slight lateral nystagmus. Menstruation irregular and scanty. Teeth apparently healthy apart from one slightly decayed.

Progress.—She slowly deteriorated. At various times hormotone, œstroform, pancreatin, ol. morrh. c malt, ferri et ammon cit., alkaline mixtures, ultra-violet rays and dental treatment were all given a trial.

November 14, 1934: She was now intensely suicidal. At various times she attempted suicide by tying a handkerchief round her neck, attempting to swallow her tooth-brush; attempted to strangle herself on numerous occasions with ribbon from her underclothes, etc.; tried to swallow her handkerchief, the bedclothes, etc.; while being fed she deliberately tried to inhale food into her trachea, etc.

On November 27 she attempted suicide by pushing a needle into her chest. An operation under local anæsthetic was performed following an X-ray examination, and the needle, which was found to be impinging on the pericardium, was extracted.

On December 2 her condition was grave, although her wound healed well. She required to be tube-fed, moaned continuously and begged to die.

On December 4 hyoscine was found to have a most dramatic effect, and following injections of this she was, for a time, bright, cheerful and perfectly normal, but the effect of the injections became shorter and shorter and eventually failed completely.

X-ray examination suggested the presence of a duodenal ulcer, but a course of histidine had no effect.

Her sinuses were X-rayed, but nothing abnormal was found.

Her weight fell to 3 st. 6 lb. (from 7 st. 4 lb. on admission); she was depraved and filthy in her habits, and she covered her bed and the walls of the ward with evil-smelling sputum.

X-ray examination of her teeth revealed an unerupted wisdom tooth and several septic and misshapen teeth. These were extracted.

She gradually improved, her weight rose from 3 st. 6 lb. to 7 st., and she departed recovered on April 28, 1936.

She remains very well.

CASE 3.—Confusional psychosis associated with an impacted and unerupted third molar.

G. R—, female, married, aged 54. Admitted February 24, 1936. First attack.

History.—Family history normal. Is stated to have been peculiar for more than a year before her admission. Her son stated that as the result of financial worries she became depressed and developed hypochondriacal delusions.

Condition on admission.—Mental state: Miserable and depressed, groaned continuously. Agitated and resistive. Moaned that her brain was coming down her nose, that she had no stomach, that her bowels and throat were stopped up, etc. Memory impaired; sleepless.

Physical condition.—Pale and poorly nourished. Thyroid enlarged. Systolic murmurs at all cardiac areas. Systolic blood-pressure 200 mm. Hg. Gross dental sepsis obvious. Blood Wassermann negative.

Progress.—She deteriorated both mentally and physically, and was too feeble to be out of bed. Her habits became so filthy that she had to be removed to a single room. She developed copious sialorrhœa, spat everywhere, and the floor of her room was constantly wet with enormous quantities of sputum.

On April 16, 1936, tube-feeding became necessary.

On May 5 her teeth were X-rayed, and on May 20 all her teeth, including an unerupted, impacted wisdom, were extracted.

On June 1 her complexion was healthy, circulation improved, able to be up, eating well, and had ceased to spit.

She continued to improve, was discharged recovered May 10, 1937, and remains well.

CASE 4.—Schizophrenia exhibiting striking improvement following removal of dental and tonsillar sepsis.

M. B. L—, female, aged 27, shop assistant. Admitted August 14, 1935, as a private temporary patient.

History.—Her father was a chronic alcoholic. She is stated to have been a bright cheerful girl, until severe attack of influenza three years before her admission. This febrile attack followed the breaking-off of her engagement. Since this illness she has never been normal and her whole character changed in every way—tidiness became slovenliness, her cheerful nature changed to moodiness and she had become morose, surly and actively resistive. She had attacked her relations, and spent long periods chuckling and muttering to herself.

Condition on admission.—*Mental state:* Dull, vacant expression. Replied to questions completely at random, completely apathetic to her position. Disorientated in time and place; vividly hallucinated. Striking lack of co-ordination between intellectual and emotional activities.

Diagnosis.—Schizophrenia.

Physical condition.—Moderately nourished. Blood Wassermann negative. Gross tonsillar and oral sepsis.

Progress.—She received dental treatment, a course of continuous colon irrigation and a course of T.A.B. vaccine intravenously, but slowly deteriorated and became erotic, faulty in her habits, impulsive and grossly schizophrenic.

On August 12, 1936, she was transferred to the voluntary class, and at this time she was described as being erratic, impulsive and fatuous. She was so noisy as the result of her hallucinations and so faulty in her personal habits that it was not possible to allow her to attend any of the usual entertainments.

On May 28, 1937, tonsillectomy was performed; this was followed by anti-streptococcal (scarlet fever) serum and intramuscular colsul, after which mental and physical improvement was apparent.

On December 25 she departed in the care of her parents. Since then they have written thanking the hospital for the change in her condition, and stating that she is well conducted at home and has given no trouble or anxiety whatever.

CASE 5.—*Schizophrenia associated with dental and tonsillar sepsis showing mental and physical amelioration following treatment.*

C. V. P. M—, male, aged 26, single, butcher's journeyman. Admitted June 12, 1933, from another mental hospital. Date of certification, April 24, 1933.

Family history.—No psychotic history.

Personal history.—On admission was in an agitated, restless, confused state. He had both visual and auditory hallucinations; was unable to give a connected account of himself; personal habits were perverted. At times noisy, impulsive and quarrelsome, while at other times he was dull and retarded.

Physically.—Height, 5 ft. 8½ in. Weight, 11 st. 6 lb. Poor heart-sounds, with impaired peripheral circulation. Wassermann reaction negative.

Diagnosis.—Schizophrenia.

Progress and treatment.—His mental state fluctuated considerably for some time following admission, but with no sign of any improvement. On April 24, 1934, he began a course of T.A.B. intravenous injections, which concluded in May, 1934. There was no appreciable change in his condition following this treatment. Between April, 1936, and August, 1936, he received dental treatment at various times, with extractions of septic teeth under local anæsthesia. He improved slightly, but developed persecutory delusions against members of the staff, and grandiose ideas of his importance. He was examined by the E.N.T. Surgeon, who removed, on September 17, 1937, tonsils containing obvious pus. He has gradually improved since that date, and now is in good physical condition and his mental state shows little amiss, save that he is rather simple, childish and somewhat dependent. He is not now deluded or hallucinated, and is employed on the farm, being an excellent, willing worker—a contrast to his former state.

CASE 6.—*Confusional psychosis associated with gross oro-naso-pharyngeal sepsis.*

R. L. M—, female, aged 25, married. Admitted May 4, 1935. First certification.

History.—A sister mentally defective. She had suffered from attacks of sore throat at intervals for years, but was normal mentally until five months before

her admission. Following upon an attack of sore throat, rheumatic pains and œdema of her legs she became depressed, confused, incoherent and violent, and lost weight rapidly.

Condition on admission.—*Mental state* : Completely confused, unable to give an intelligent reply to the simplest form of question, moaned and groaned continuously, resisted all attention, personal habits filthy and depraved, difficult with food, obviously hallucinated.

Physical condition.—Feeble, emaciated and obviously very ill. Anæmic. Heart enlarged. Teeth grossly decayed, with advanced pyorrhœa. Tonsils large and poured liquid pus. Infected adenoids. Blood Wassermann negative.

Progress.—She deteriorated rapidly, and by May 10, 1935, she was gravely ill and tube-feeding was necessary. Her mouth at this time was stated to be almost continuously full of pure pus. Diffusible stimulants and coramine were required at frequent intervals, and eventually she recovered sufficiently to be given a course of continuous colon irrigation. All her teeth were then extracted, and this was followed by a course of T.A.B. vaccine intravenously.

She now improved somewhat, but remained depressed, aimless, confused and unable to interest herself in any activity. Her habits were still occasionally faulty.

On April 16, 1937, her tonsils and adenoids were removed, and this was followed by prontosil, intramuscular colsul and antistreptococcal (scarlet fever) serum. Following operation she menstruated for the first time since admission. She exhibited immediate improvement, her condition became more and more normal, and on February 14, 1938, she was discharged recovered.

She volunteered the statement that she began to get well after her operation.

Her husband has written recently, saying she is well and managing her home affairs.

CASE 7.—*Delusional psychosis associated with dental and tonsillar sepsis.*

R. G. H.—, male, aged 32, single, farm labourer. Admitted November 11, 1937.

Personal history.—For a month previous to admission he had been peculiar, hallucinated, erratic and deluded.

Condition on admission.—*Mental state* : He was simple, childish, vividly hallucinated and deluded. He stated that two nurses from a neighbouring hospital put electric wires on his head and conversed with him through them. He also made rambling, disconnected statements concerning the Matron of the same hospital, saying that he heard her shooting the nurses because they refused to commit suicide at her request.

Physically.—Height, 5 ft. 7 in. Weight, 9 st. 7 lb. Many septic teeth. Tonsils enlarged and infected. Wassermann reaction negative.

Progress and treatment.—His condition improved only slightly, and he retained his hallucinations and delusions.

On January 12, 1938, he had all his teeth extracted under general anæsthetic. This was followed by the operation of tonsillectomy under general anæsthesia on February 4, 1938, when purulent hypertrophic tonsils were removed. He has improved rapidly since that date, and now is physically fitter, having put on 2 st. 7 lb. in weight in three months; mentally, he has lost all his delusions and hallucinations. His discharge in the near future is contemplated.

He attributes his improvement to his operation.