with tympanites. Abundant water should be drunk to promote elimination, and the ordinary diet should consist of soups, broths beef juice, eggs, farinaceous gruels, and milk. Oranges and weak coffee may be taken.

With this simple but effective armamentarium one may deal satisfactorily with the greater number of the more serious cases of pneumonia, but it will be found that much of it, simple as it is, may be unnecessary if the patient has continuous access to fresh free flowing air.

THE LENHARTZ TREATMENT OF GASTRIC ULCER.

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Although Lenhartz, in January, 1904, published his results of treating gastric ulcers by feeding without a preliminary period of starvation, this method has not appealed to the profession generally. The older plan of combining starvation and gastric rest with rectal feeding, as a prerequisite to a course of graduated milk diet, has held its time-honored preëminence.

This accepted method of treatment could almost be called classic, for it received its first impulse from Cruveilhier at the time of the modern awakening of medicine, and its development has been associated with the names of such masters as Ziemssen and Leube. This older method still retains its hold on the practitioner both because it fulfils the seemingly rational indications to give an open wound rest and to substitute an efficient means of nourishing the patient while the normal food supplies are contra-indicated, but also because it cures if efficiently carried out a very large majority of the patients even if their symptoms are severe and accompanied by profuse hemorrhage and its resulting anemia.

The cases which form the basis of this study are few in number, but so striking in results, that a judgment on the Lenhartz treatment seems justified. They include 5 cases of ulcer of the stomach and 3 cases of hyperchlorhydria, probably unassociated with ulcer. They are from the records of the New York Hospital.

The routine treatment of gastric ulcer at the New York Hospital has been, for many years, to carry out the old systematic cure of Ziemssen and Leube. The results have been good, but the occurrence of the 2 following cases led to a trial of the Lenhartz treatment, with the results which are given here. The first of these cases to present an unusual complication is, in brief, as follows:

The patient was a well-developed man, a carpenter, and came

under treatment December 27, 1905. He was prostrated by heat six months previously (July 18), and ever since had suffered from attacks of vomiting with intense pain in the stomach. Attacks follow the taking of solid food. Patient has been on a diet of raw eggs, stale bread, and milk almost continuously for four months. Weighs 157 pounds, a loss of 13 pounds from top weight. He is constipated and has never vomited blood or seen tarry stools. Physical examination showed normal heart and lungs, a palpable spleen, and a stomach splash to navel; there was no pain or tenderness, but the right abdominal rectus was distinctly resistant. Blood and urine examinations were normal, the stools showed "occult" blood, and an Ewald test meal showed a free HCl of 30, a total acidity of 50, and there were no evidences of gastric stasis.

The patient was put on a routine ulcer cure and fed by nutrient enemas of peptonized milk and eggs. This was continued, with gastric starvation, except for water, for thirteen days. Gastric feeding, with peptonized milk, was begun, and by the twentieth day of treatment the patient was taking eight ounces of milk every four hours. On this day he developed a purpuric rash on both legs, with pains and with spongy, bleeding gums. The ulcer cure had developed a typical attack of scurvy. Under proper and rapidly increasing diet the patient made a good recovery and remained well and cured of all symptoms two months later.

The second patient presented the complication of continuous small hemorrhages in spite of the starvation and the gastric rest of the classical cure. The history of this patient during the first two weeks of her stay in the hospital is as follows:

Mary K., single, aged thirty-two years, domestic, was admitted June 28, 1906. After seven days of rectal feeding and gastric starvation, and a subsequent seven-day period of very moderate gastric feeding with fully peptonized milk, she continued to have occult blood in the stools, had a hemoglobin percentage of 39, and presented the therapeutic problem whether to continue medical treatment or to resort to surgery, with the idea of doing a gastro-enterostomy. Before resorting to surgical interference, it was decided to try a Lenhartz course, which resulted in a cure, as shown in the detailed history of Case I below.

The Lenhartz treatment is based upon the principles, first, to furnish nourishment and improve the patient's general condition, and thus favor the better healing of the ulcer; second, to prevent distention of the stomach both by careful limitation of size of each food portion and of the fluids taken, and by the use of ice applications externally; and third, to prevent the action of the excessive HCl content on the ulcer surface by combining it with food albumin and by the use of bismuth subnitrate internally.

These indications of the Lenhartz treatment are accomplished by fulfilling the following conditions: First, to continue to nourish

the patient by feeding by the stomach; second, to use concentrated foods, rich in albumin, for this purpose, in order that the acid of the gastric juice will be rapidly combined with the food proteid; third, the exhibition of the food in small amounts at short intervals of one hour; fourth, the insisting on slow mastication and slow eating, which is best accomplished by feeding the patient by teaspoonful amounts to each mouthful, and by never allowing him to feed himself during the whole two weeks' period; fifth, to insist on a three to four weeks' rest cure in bed; and, sixth, of course other medicinal procedures are allowed if indicated, for example: an ice-bag to the epigastrium and bismuth subnitrate internally for hemorrhage, enteroclysis for the effects of hemorrhage, and iron and arsenic for the anemia. The routine course of treatment covers two weeks' time, and includes the following articles of diet, which are prepared as here detailed: Fresh milk, iced; raw eggs, the whole egg is beaten up and iced; both the milk and the egg are prepared in a covered glass tumbler, surrounded with cracked ice, and kept at the bedside. The feeding spoon is also kept iced in the same manner. The only change in the early routine consisted, if the patient preferred, in mixing the eggs and milk and feeding the mixture, instead of the hourly alternation as prescribed by Lenhartz. Granulated sugar is added to the eggs after the third day. The raw scraped beef, boiled rice, and zwiebach are prepared in the usual manner. Cooked chopped chicken was substituted in these cases for the raw ham of the original Lenhartz dietary, to conform to the taste of the patients treated; and, finally, butter is a prominent article of diet.

The following changes were also permitted from the strict rules of Lenhartz, and after the tenth day broiled chop, beefsteak, or chicken was substituted for the raw beef, and ice-cream was added during the last four days in several cases The zwiebach was changed to toasted bread, and other cereals took the place of rice during the same period.

Up to the tenth day a strict adherence to the routine was insisted upon, both in regard to the amounts of each article of diet and to the feeding intervals, and also to the totals of each article for each daily ration. The food was given in hourly intervals during ten days from 7 A.M. to 9 P.M., and a complete rest was allowed during the night for ten hours. The iced foods were prepared in small quantities as needed. The daily schedule, with amounts of each article of diet, is as follows:

Day.	*Eggs.*	*Milk.*	*Sugar.*	*Scraped Beef.*
I.	2 drams each dose; total, 2 eggs.	4 drams each dose; total, 6 ounces.		
II.	3 drams per dose; total, 3 eggs.	6 drams per dose; total, 10 ounces.		
III.	Half ounce per dose; total, 4 eggs.	1 ounce per dose; total, 13 ounces.	20 grams added to eggs.	
IV.	5 drams per dose; total, 5 eggs.	1¼ ounces per dose; total, 1 pint.	"	
V.	6 drams per dose; total, 6 eggs.	14 drams per dose; total, 10 ounces.	30 grams.	
VI.	7 drams per dose; total, 7 eggs.	2 ounces per dose; total, 22 ounces.	40 grams.	36 grams in 3 doses.
VII.	4 drams per dose; total, 4 eggs. Also, 1 soft-boiled egg every four hours; total, 4 eggs.	2 ounces per dose; total, 25 ounces.	40 grams.	70 grams with boiled rice, 100 grams in 3 doses.
VIII.	"	2½ ounces per dose; total, 28 ounces.	"	"
IX.	"	3 ounces per dose; total, 1 quart.		Beef same. Rice 200 grams, Zwiebach 40 grams in two portions.
X.	"	Add cooked chopped chicken 50 grams, also butter 20 grams.	"	"

XI–XIV. Interval of feeding made two hours, milk given in 6-ounce doses with ½ ounce of raw egg. Butter increased to 40 grams and various additions made, as detailed above.

The 5 cases of gastric ulcer which were treated by the Lenhartz method presented positive evidence of hemorrhage at the time of beginning treatment, and should be classified as belonging to the severe type of the disease. Four of the patients presented a marked anemia from loss of blood, and the hemorrhage continued for eight, twelve, thirteen, and twenty-one days after beginning treatment. In spite of this the routine was persisted in because of the success in the first case tried. Each case presents some point of special interest.

In Case I the limit had been reached of a course of medical treatment of fourteen days, organized on the old plan. The patient's condition would not permit of a renewal of the starvation period nor would the bowel tolerate a return to a strenuous course of colonic feeding. It was a serious question if surgical interference did not offer the only relief possible. The improvement under the Lenhartz cure was more rapid and more satisfactory than a mere study of the written record with its positive blood reaction in the stools for twelve days and its slight rise of only 4 points in hemoglobin for the same period would lead one to infer. The patient lost her anxiety and became calm and contented. The very evident daily increase in her diet had a most soothing effect on her mental

conditioa. She felt and knew she was getting well. She has remained well and has had no stomach symptoms.

Case II presented a second attack of bematemesis; the first attack had been treated surgically by the excision of a part of the stomach wall, which was about two inches square and contained five or six bleediag points. No gastro-enterostomy had heea doae at that time. The Lenhartz eure was complicated by a personal distaste on the part of the patient for the milk and raw-egg diet even to the point of nausea and vomiting, which was controlled hy magnesia internally, an ice-bag to the epigastrium, and by one period of tweaty-four-hour cessation of the eure. Except for this the recovery was steady, and the patient left the hospital on the thirty-fifth day, free from gastric symptoms. She bas remained well and has heen at work continuously ever since.

Case III presented on admissioa a marked anemia, large tarry stools, a febrile action ranging from 100° to 104° for sevea days, a distinctly evident irritation of the peritoneum and an inflammatory blood. The white cells counted 16,200 to 22,800 and the polymorphonuclear percentage ranged from 83 per cent. on admission to 75 per cent. on the eighth day of observation. The question of perforation of an ulcer with the necessity of a surgical emergency operation was present throughout the whole first week of treatment. The Lenhartz treatment was begun at once, and, combined with the needed stimulation, brought the patient hack to a less critical state at the end of a week. The stimulation consisted of strychnine and digitalone hypodermically, notwithstanding the existing hemorrhage. This patient was kept in bed four weeks, and was discharged from the service on the forty-first day after admission. At present the patient is well, has gained weight, and has no stomach symptoms.

Case IV might be characterized as a routine case of the severer type. The hemorrhages did not cease until the thirteenth day, and the hemoglobin fell to 19 per cent. In spite of these evidences of a lowered vitality, the patient felt well and took bis routine food with appetite. This patient reached a point quite below that usually set as a safe one for the performance of abdominal surgery and yet he made a good recovery. Now he is in good health, but eats irregularly, often hurriedly, and suffers occasionally from a burning pain in the epigastrium.

Case V presented a condition similar to that of Case IV. She was admitted suffering from a severe gastric hemorrhage, with low hemoglobin (20 per cent.), tarry stools, and temperature of 102°. The patient made an excellent recovery and was practically well on tbe twenty-second day of treatment, when she began to show an increasing febrile action. She developed typboid fever which ran a typical course with relapse. It must he considered a very favorahle fact for the Lenhartz treatment that no gastric complications

arose in this attack. The patient was finally discharged after sixty days of hospital care, cured of both the gastric ulcer and the typhoid fever. She has worked continuously from the day of discharge from the hospital, has gained over ten pounds in weight, has no stomach symptoms, and feels hetter than at any time in her life.

The course of the progress in these 5 cases may be seen in the following table, which shows the time of the disappearance of blood from the stools, the gain of weight, and the gain in hemoglobin content of the blood:

Case.	Stools first free from blood by chemical test.	Weight first out of bed.	Weight on discharge.	Hemoglobin percentages. On entrance.	Lowest observation.	At end of routine cure; 14 days.	On discharge
I	12th day	95	109	38	36	44	66
II	Never found	125	126	85	83	83	90
III	21st day (very faint after 16th)	101	108	46	34	40	75
IV	13th day	123	129	29	19	33	58
V	8th day	no observations	no observations	20	20	34	54

The Lenhartz routine was applied in the treatment of three other patients who suffered from an hyperacid secretion, hut who prohahly did not have a peptic ulcer.

The first of these, Case VI, was an uncomplicated case, with pain and vomiting. He was discharged on the seventeenth day of treatment, just three days after the end of his Lenhartz cure. The diagnosis of ulcer in such a case might seem justified hy the facts, hut the rapid cure and absence of symptoms during treatment would rather tend to a diagnosis of simple hyperchlorhydria, in spite of the hlood found in the test meals. Lenhartz has suggested that such cases of possible ulcer without hemorrhage be given a shorter course of treatment, and that the dietary regimen be begun on the fourth to sixth days of the regular cure. This patient six months later was perfectly well and had no trouhle with his stomach

The 2 remaining cases present serious complications of stenosis of the pylorus, one a mechanical benign stenosis and the other a functional stenosis. Both gave the symptom complex known as gastrosuccorrhea.

Case VII presented a dilated stomach and hyperacidity, but with no retention of food after the period of night fasting. The analysis of the fluid taken from the fasting stomach showed a free HCl of 24, a total acidity of 50. She was very neurasthenic and difficult to manage, and up to the time of beginning this treatment

lost both weight and strength. Under the Lenhartz routine, which was brought to a successful end, and after ten days of after-treatment, the patient gained thirteen pounds in weight and eleven points in hemoglobin. The only symptom remaining at the time of discharge was a slight morning nausea. After four weeks the patient left the hospital, but returned two months later with a lesser attack of the old symptoms. The vomiting was the prominent feature of her relapse, and has persisted to some extent ever since.

Case VIII gives all the classical symptoms of a benign stenosis of the pylorus due to adhesions. The patient had been in the surgical service at intervals during the previous five years. He was first operated on for chronic appendicitis and a catarrhal appendix was removed. He gave at that time symptoms of gastric stasis of two and one-half years' duration. Three months later he was re-admitted for dilated stomach, due to pyloric stenosis and tuberculous peritonitis. A posterior gastro-enterostomy was done. Fourteen months later he returned to the hospital with the same symptoms, and an anterior gastro-enterostomy was done. One year later he was operated on again, and many peritoneal adhesions were broken up. On admission to the medical service his free HCl was 56, total acid 72, and he had been vomiting continuously for three weeks. The Lenhartz treatment was complicated by vomiting attacks, but he was discharged on the twenty-seventh day after beginning the cure. A test meal at the end of the treatment resulted in a free HCl of 22 and a total acidity of 56. After leaving the hospital he was comfortable at first on a diet of meat, eggs, and bread, taken in frequent small meals. But two months later his symptoms had returned and he was re-admitted to the hospital. A gastric examination showed stasis, a gastrosuccorrhea, and a hyperacidity. The fluid from the fasting stomach had a free HCl of 33, a total acidity of 52, and an Ewald test breakfast had a free HCl of 47 and a total acidity of 66. A second Lenhartz cure was given and he was discharged after twenty days' treatment. When seen six months later he weighed 135 pounds (a gain of 37 pounds in all). He had been working steadily for three months; he is on small frequent meals of a selected food and wears an abdominal belt.

This group of cases includes only 8, but they are all of the severer type. They all were benefited by the treatment, and, except the cases with stenosis, they all were cured. One patient was cured after a distinct failure of the older treatment. One patient recovered from very threatening symptoms of an impending rupture of the ulcer. The fact that no failures are recorded in this short series, and that at least 2 patients were kept free of surgical interference, do not warrant the conclusion, however, that the Lenhartz cure is infallible. It is far from being a miraculous cure, and it will never entirely eliminate surgery from the treatment of gastric ulcer. Lenhartz would limit surgical treatment of gastric ulcer to cases with

stagnation of food and to those with perforation, peritonitis, or subphrenic abscess. But further experience will undoubtedly find some failures, and surgery will still find its application in a broader field in this disease than would be given to it by Lenhartz. This cure would seem to have a special use in cases with low hemoglobin, which are bad subjects for surgery, even if operative interference is needed later for continuing hemorrhages, for relapses of ulceration, or for the single indication of Lenhartz (motor insufficiency).

This series does warrant the conclusion that the original claims of Lenhartz are correct: First, that the cure is at least equally as efficient as the older method, and that it does not deplete the patient; second, that the cure is more rapid as well as more certain; third, that the vomiting and bleeding stop more quickly and relapse less frequently than in the Leube cure; fourth, that the pain ceases promptly and that morphine is never needed; fifth, that the food supply is sufficient throughout; sixth, that it is possible to treat the anemia earlier with iron and arsenic than in the Leube cure; and seventh, that it is possible to return to a full diet and to the patient's usual occupation earlier than in the older cure.

THE DIAGNOSIS AND TREATMENT OF THE GASTRIC NEUROSES.[1]

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Nothing is more common among our patients than a complaint of "stomach trouble." Again and again this is the answer given when they are asked what brings them for advice. The frequency of this complaint has impressed itself upon me throughout a number of years in both private and dispensary practice. To determine more accurately the proportion of cases in which it is the chief item in the history, I have recently reviewed the records of all the cases seen in the Medical Clinic of Cooper Medical College from January 1, 1900, to January 1, 1906. During this time there came under observation 4232 cases; and of this number I find that 574 have given "stomach trouble" as the complaint that led them to seek advice. Of course it is well understood that the patient's complaint does not always indicate the site of disease; and yet it is interesting to note that a large proportion of patients are thus shown to have trouble with their digestion

[1] Read at a meeting of the Nevada State Medical Society, at Reno, Nevada, October 8, 1907.