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SINGULTUS GASTRICUS NERVOSUS.

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Singultus, or hiccough, is a symptom expressed as a sound made by the sudden and involuntary contraction of the diaphragm, and the simultaneous contraction of the glottis which arrests the rising air in the trachea. Depending upon its cause, singultus may last for a few minutes or several hours or be continuous, and also, it may recur during days and months. Among the most numerous conditions in which it is present may be mentioned the diseases of the abdominal viscera (gastritis, primary and secondary ecstatic gastric atony, gastric carcinoma); enteritis, internal and external intestinal obstruction or other causes of intestinal obstruction or paresis (such as the postoperative cases), appendicitis, cholera; pancreatitis (usually suppurative); disease of the liver; peritonitis (especially when it involves the upper abdomen and the peritonæum diaphragmatis; and tympanites (such as the idiopathic dilatations or paretic conditions of sections of the hollow viscera of the alimentary canal);—diseases of the nervous system—viz., epilepsy, tumor of the brain, meningitis, hydrocephalus, shock, mental emotions, and hysteria; and certain constitutional conditions, such as diabetes, gout, chronic nephritis, some cases of gangrene of the lung, diaphragmatic pleurisy, dysmenorrhœa and pregnancy, alcoholism, Addison's disease, typhoid

fever and typhoid states, and large hæmorrhages. The type I desire to draw attention to here is a functional nervous form occurring as a symptom of a neurotic condition of the stomach.

In most of the textbooks upon the diseases of the stomach the neurotic motor conditions are described under specific headlines, because some distinctive feature was predominant. Among such may be mentioned primary atony, acute postoperative dilatation of the stomach and duodenum, cardiospasm, pylorospasm, excessive nervous motility, regurgitation, merycism (rumination), eructatio nervosa, vomitus nervosus, nausea nervosa, pneumatosis, peristaltic unrest, antiperistaltic restlessness, and pyloric incontinence. To the genus of those in which some one symptom is particular, I wish to draw attention to the fact that a neurotic condition of the stomach can exist as a manifest clinical entity apart from any association with hysteria or other generally neurological conditions, and report that I have met with two clean cut cases of these in my practice.

Nervous vomiting, merycism, regurgitation, and eructations all result from a return of the gastric contents as the main symptom. In singultus gastricus nervosus a continuous hiccough lasting for a long time varying from weeks to months and without any gastric return at any time may be seen. The condition usually accompanies a hyperæsthesia of the stomach glandularis also continuous while the hiccoughing is the feature. As a condition it is rarely met with (seen by me in only two cases of several thousand neurotic stomach conditions), and most probably usually in well nourished young adults and most often in the female. When more of these cases have been studied it is probable that an argument will be presented that those of singul-

tus gastricus nervosus are only those of hysteria in which a continuous hiccoughing is prominent. Against this I wish to argue that the close study of these two cases in the way of heredity, past history, cause, imitation, syphilis, hæmorrhages, infectious diseases, chemical toxic causes (lead, alcohol, tobacco), and the usual symptoms of hysteria were not present, and both of them had a bona fide gastric hyperæsthesia accompanying them. The most careful examination in both failed to elicit any skin anæsthesia, hyperæsthesia, or paræsthesia, had pain, emotional crises, were mentally excitable or depressed or had loss of emotional control, were impulsive, had spinal or vertical pains, globus hystericus, vasomotor disturbances, disturbed sleep, somnambulism, or cerebral automatism, paralysis, contractures, tremor, ataxic or choreic movements, absence of skin reflexes, complete loss of concentric limitation of the visual field or disturbance of color sense, manifested the presence of hysterogenic zones, pseudoangina, amyosthenia, constipation, and other of the less common clinical symptoms observed in the more or less irregular course of hysteria. Both of these cases were exhaustively examined by competent specialists, among whom were neurologists, ophthalmologists, gynæcologists, and others, and both of them were considered as normal in all other respects, and I therefore believe that such a neurotic condition of the stomach does occur the cause of which is primarily situated in that organ, and that this gives rise to involuntary contractions of the diaphragm as a reflex manifestation.

Case I. Mrs. B. H., twenty-nine years old, first came under observation in my clinic April 10, 1908. Her family history was negative, her father being alive and well, her mother dead from an unknown cause, several brothers and sisters were well. History of nervousness, epilepsy, alcoholism, etc., in the family, negative. Her personal

habits had always been good, she ate rather heavily of the substantial plain foods at regular meal times, drank nothing alcoholic, lived a happy and comfortable married life, and had no worry in particular excepting that she had not become pregnant, and this did not affect her much. Her bowels moved regularly once or twice a day.

At the time she complained of gastric distress which had begun about four months before and had become progressively worse; during this time she had been in the care of two physicians. The symptoms she complained of were a burning distress in the stomach after meals (even those of the lightest kinds), accompanied with epigastric distention, a weight in the upper abdomen, and a pressure in the lower sternum and chest. At these times some difficulty in breathing was present, occasionally a palpitation of the heart with a transitory headache, and a condition of nervousness from the distress at the time. At intervals, usually after a meat or a more abundant meal than usual, she stated to have had attacks of pain in the stomach (gastralgia) which necessitated her removing her corsets and perhaps going to bed. On two occasions a physician was summoned, hot applications to the epigastrium were applied, and in one case an injection of morphine was given; these seizures ameliorated after three or four hours time, and the pains passed off in about two more (probably when the stomach was empty of foods).

Following a purge the night before, an Ewald test meal was extracted which showed a return of 70 c.c. which was normal on macroscopical and microscopical appearance, free hydrochloric acid of 60, a total acidity of 65, and nothing else worthy of note. Examinations of her stools and urine were negative, and her blood showed 4.4700.000 red blood corpuscles; hæmoglobin, 89 per cent.; 6.900 white blood corpuscles; and the morphology of the reds and differential count of the white cells were considered normal. The physical examination was negative; the woman was well nourished, her stomach was normal in shape, size, and position, and nothing abnormal was noted in the abdomen, chest, mouth, etc.

On these findings the diagnosis of hyperæsthesia gastrica with slight increased gastric secretion was made, and the case was treated with a bland diet consisting essentially of milk, cream, butter, eggs, and well cooked cereals in amounts equal to 3,000 calories each day, and small doses of sodium bromide and tincture of valerian. She report-

ed at intervals of two or three days for about four months, during which time she made a rather slow but steady recovery. At the end of the sixth week another Ewald meal was extracted which showed a decrease in the hydrochloric secretion to about one third of the former amount.

At her next to the last visit to the clinic at this period, she reported to have skipped a menstruation for the first time in years. On examination it was suspected that she was pregnant, and this was found to be so on a subsequent examination several weeks afterward. The medical treatments were discontinued and she was advised to take rather generally of all kinds of simple foods and report again after her delivery.

She reported again on June 12, 1909, and gave the following history. The child was born on March 15th, living but a few moments after its birth. She said that during the first three months of her pregnancy she was troubled with attacks of vomiting and morning nausea, but that after this she had had no gastric distress to speak of and was only slightly constipated during the last two months of pregnancy. Two months before the infant was born she began hiccoughing, at first at long intervals and then gradually becoming more frequent and pronounced. These seizures continued for the three months following her labor, became most troublesome and incessant, and on the return of the former gastric symptoms she associated the two as part of the same condition and again sought aid.

The physical examination at this time by several specialists in the clinic and myself failed to show anything other than that she was about the same type of a case as before excepting that she was hiccoughing at intervals of about every three minutes; this condition she said being decidedly less although not entirely ceasing during the night when asleep. A test meal extracted a few days after her return and an x ray plate showed practically a normal condition of stomach. On fluoroscopic examination distinct contractions of the diaphragm were observed at the time of hiccoughing.

In the beginning the case was most troublesome to treat in that no measures seemed efficient to control or mitigate the diaphragmatic contractions. However, as a result of large doses of sodium bromide (ten grammes a day), she gradually made improvement, and at the end of five weeks of this treatment was hiccoughing only two or three times a day. The diet previously mentioned was again instituted and persisted in, the doses of bromide lowered, and

she finally made substantial recovery although compared to her usual weight she was short ten pounds.

I believe this to be a case of the condition I drew attention to, the diaphragmatic contractions being a symptom of this gastric neurosis, and in the beginning probably induced by the spasmodic contractions of the stomach and diaphragm (a condition common in pregnant women and the cause of the vomiting of the early months of pregnancy).

Case II. April 7, 1909. Mrs. E. B.; thirty-four years old; housewife; mother of two children, the oldest seven years, the youngest three years; family history negative; habits had always been good, ate regularly, lived a simple and happy home life, and drank very moderately of tea and coffee and nothing alcoholic.

Personal history. Patient had always been moderately constipated, although when she drank four glasses of water and ate fruits twice a day her bowels moved without further assistance. She had had some minor attacks of stomach distress in the past years, usually in the late winter when she had been housed up too much. These attacks were on the order of slight degrees of distress in the epigastrium, lasting only a few days and passing off with a little care in the selection of foods she partook of, and at which times she always had taken a purge. She began with "stomach trouble" in the first part of February of the present year. She awakened one morning with a frontal headache, became nauseated, and vomited shortly. Toward afternoon the headache subsided (took acetylsalicylic acid), the nausea became less prominent, and she began to hiccough at intervals of about once every hour. On the following day she left her bed, the nausea was less pronounced, the vomiting had stopped, but the hiccoughing continued. Gradually, the distress after meals became intensified, consisting of weight, pressure, and distention in the epigastrium, eructations of inodorous and tasteless gases, and a more noticeable constipation. Sometimes when the distress was marked there were pains radiating from the cardiac region to the left shoulder and back. At these times she felt weak and often was troubled with palpitation. From the onset of the acute attack the hiccoughing continued becoming more frequent and regular. Fearing to intensify the always present distress in her stomach and particularly to augment the hiccoughing she

kept eliminating certain foods—even the simple ones—until she was living on only small amounts of milk before I saw her. However, no measures at dieting seemed to assist her although under medical care of two physicians, the first of whom said she had "kidney trouble" the second "anæmia" (the writer telephoned the first attendant who said that he did not find albumin or casts in her urine). She steadily ran down in weight until just before she was forced to take to her bed she was twenty-seven pounds short of her original weight.

On my first visit she was in bed where she had been for five days, too weak to be about, and had not slept any to speak of in that time. Her emaciation and anæmia were noticeable, her face drawn and anxious, hiccoughing about every four minutes, and tossing restlessly in the bed. She had an aversion for foods and drink of all kinds, had taken only small amounts at the earnest persuasion of her husband, and altogether looked desperately ill. Nothing particular was found on careful physical examination excepting that her stomach was markedly tympanitic and the pyloric region reaching to two centimetres below the umbilicus, a hæmic cardiac and jugular murmur, and a regular pulse of rather small quality and a rate of from 105 to 120.

The laboratory findings of specimens obtained during the three days following were: Blood, red cells, 311,000,000; hæmoglobulin, sixty-two per cent.; white cells, 7.750; differential count normal. Fæces light colored, food particles normal, Gram differential stain not significant, no blood or mucus, ten grammes of fæces in 25 c.c. of water fermenting twenty-three per cent. of gas in twenty-four hours, and thirty-one per cent. in inoculated dextrose bouillon. Ewald meal, 79 c.c. return, starch apparently well digested, free hydrochloric acid, 21, combined hydrochloric acid, 29 (total, 50), total acidity, 57; enzymes normal quantity, no blood or increased amounts of mucus. Urine, twenty-four hours, 995 c.c.; specific gravity, 1.021, acid, no glucose, albumin, or casts; indican, oxalic acid, and uric acid in slight excess. Chlorine and nitrogen contents normal, phosphate contents normal, sulphate contents slightly raised; urea, 11 grammes.

This clinical condition ran on progressively for over three weeks. Consumption of food by mouth and retained on any one day was never more than 1,500 calories, and 1,000 more nearly represented the daily average. The hiccoughing was insistent day and night, and the acute distress caused by even small quantities of food or drink in

the stomach showed that a high degree of hyperæsthesia of the glandularis was present. Rectal feedings were resorted to and fortunately these were well borne.

Progress in the case was slow and discouraging. Bromides and chloral hydrate even in fairly large doses by both mouth and rectum gave only slight if any relief of the hiccoughing which apparently was the symptom of grave importance. Ice bags, Priesnitz bandages, and hot moist applications to the epigastrium were unavailing but some benefit was observed by the use of mustard plasters to the epigastrium and back of the neck. Galvanism of the phrenics from the sides of the neck through the abdomen to the gluteal intervals was given, but no benefit from its use could be noted. A partial chloroform anæsthesia, not enough to deaden the sensibilities, was employed and during its administration inhibition of the hiccoughing was invariably brought about—the regularity of the spasms recurring in the same intervals as before when the drug was discontinued. The picture of the case for the three weeks in bed was pitiful to observe, the woman became markedly emaciated and the pulse fast and faint, and it looked as if a fatal issue was inevitable. For no therapeutic measure that I can definitely ascribe to it, the hiccoughing then began to lessen in frequency, the stomach became more tolerant, more nourishment could be sustained, and the general condition gradually improved (at the time she was being given hypodermically moderate doses of strychnine nitrate, 1/30 grain, every four hours, for its general stimulating and tonic effects). Three weeks after the beneficial effects took place (altogether nearly six weeks) she left her bed still very weak and hiccoughing about once every hour, but the seizures were not so audible and probably the spasm not so severe as before. In about four weeks longer the hiccoughing had stopped, and the woman then made a rather quick recovery. Eight days after her first day out of bed she was weighed and it was noted that she had lost forty-nine pounds, weighing at the time ninety-one pounds. She was weighed in my office on September 15, 1909, when apparently well and was about six pounds short of her usual weight. However, off and on, she still had some sensory distress in the stomach but no hiccoughing.

This case was like the first, excepting much severer in degree. It proved to me that the condi-

tion may be seen as a serious type of affection, and in certain instances may even terminate fatally.

Finally, I wish to state that true cases of hysteria in which hiccoughing is a feature are not uncommon and decidedly more numerous than those I have described. But in these, more or less manifestations of hysteria and the appearance of the case and its course are always present. In these, the diagnosis is not difficult, and this makes the differential diagnosis between the two easy. Where doubt may exist, the rather unimportant feature of local and persistent gastric symptoms, together with the fact that hiccoughing hysterics (even when this symptom has existed for a long time) do not show much if any general deterioration in health would be helpful in distinguishing them.

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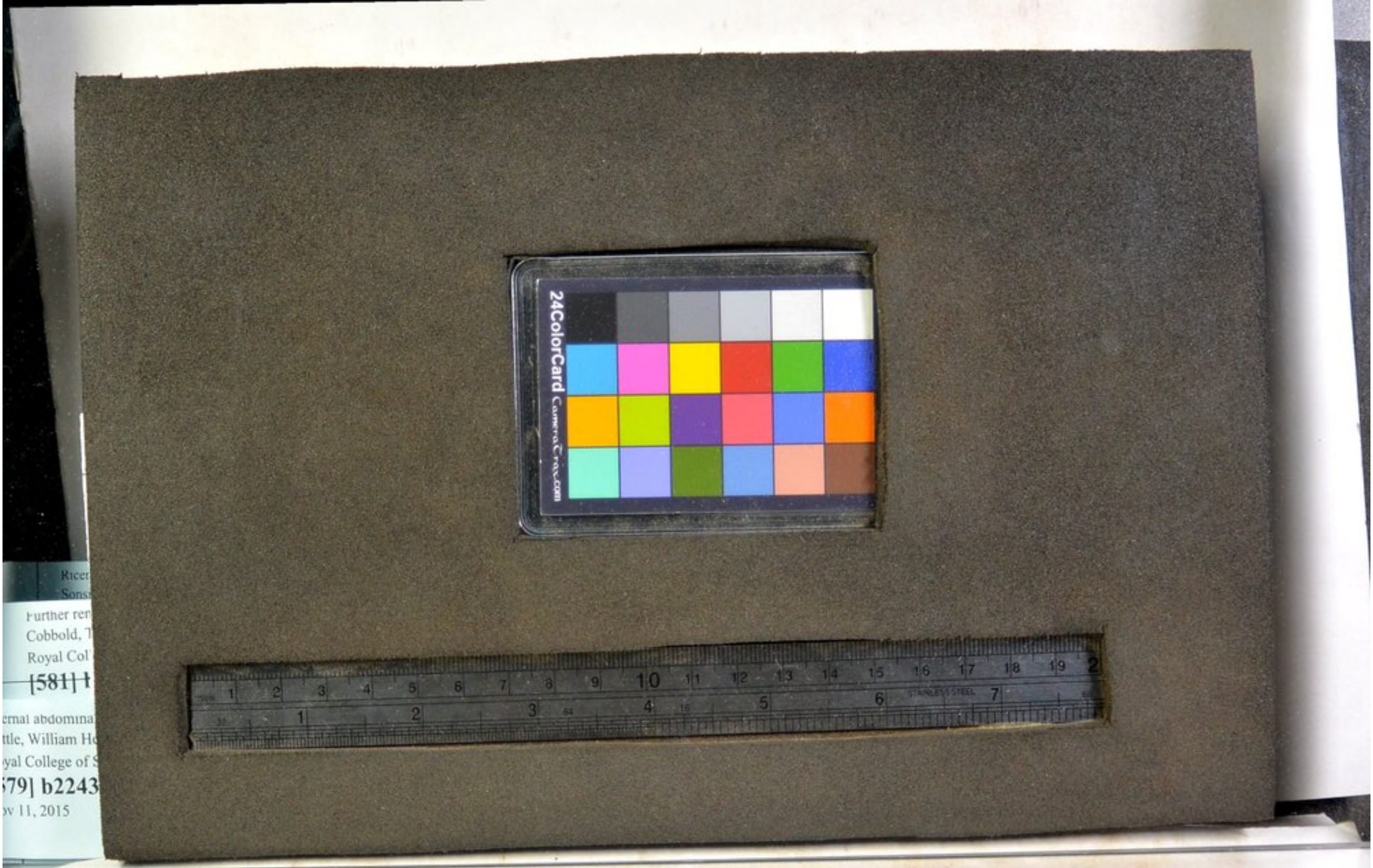
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