Dilatation of the Stomach: its causes, symptoms, and pathological changes, with remedies on its direct and indirect modes of treatment, and notes of four cases, compiled by

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It is a self-evident truth, that, while the object of the physician is to effect a cure, the rapidity and ease, with which he is most likely to attain his object, will be proportionate to the nearness, with which he can bring a suitable remedy to act directly on the diseased part. This however is by no means an easy matter in practice; and there are comparatively few diseases which can be attacked at the four corners at once — sometimes because we are ignorant of the precise focus of the disease, more often because the structures of the body are so delicately and intimately connected, one with the other, that we should have to lacerate and disturb them, before we could reach our goal (e.g., typhoid ulcers in the ileum), and thereby create a disturbance worse than the one we wished to eradicate.
Take for example the following instances, which will show pointedly the value of direct, as compared with indirect medication: A man receives a stab in the groin, and his femoral artery is partially severed, and profuse hemorrhage is the result; any ordinary surgeon, who knows his anatomy, can tie the artery, or sustain compression, until the necessary appliances have been procured for so doing; here we have direct medication applied to the injured part, with good hope of a successful result, if the patient be not too exhausted before the vessel is tied. Now compare this with the indirect method, in a case where we are compelled to treat the malady indirectly: the middle cerebral artery ruptures, and blood is rapidly expelled.
into the brain substance, breaking down its organization, and producing what is known as a 'paralytic stroke': how helplessly we are!

True, we can enjoin rest, cold applications to the head, and derivatives to the other parts of the body; but of what value would they be considered, could we only apply a ligature to the bleeding spot, and arrest the hemorrhage by direct and certain means, without at the same time injuring the surrounding structures?

This point is strikingly illustrated in the disease of which I propose to treat at present. I shall give details of four cases, in one of which was the direct treatment allowed by the patient at the commencement, with what result will presently appear...
The existence of simple and primary dilatation of the stomach, as a substantial malady, has been recognized by not a few of our predecessors and contemporaries. Leube, in his section on this malady in Liepmann's 'Handbuch' vol. vii. part 2. 1876, states that the malady was recognized among others by Stigelius in 1623, by Van Swieten in 1754, by Sauvages in 1768, by Morgagni in 1774, and, in our own time, by Oppolzer and Traube.

Of modern writers on this subject, we may mention the treatise of Kussmaul, which was published in the 'Archiv für Klinische medicin' in 1869, to a treatise on the subject by Pragoldt published at Strasbourg in 1875, and to Leube's section in the 'Handbuch'.

This disease appears to be essentially a chronic disease of the stomach, consisting in distention
of that viscus, the muscular coat becoming
attenuated and fibrous, and the mucous
membrane smooth and thin, with loss of
the case if of long duration, of many or
few of the gastric tubes, thereby interfering
with the proper secretion of gastric juice,
and the power of digestion, as well as with
the proper movements of the organ by the
weakening of its muscular coat.

(2) In most hollow muscular organs, excess of work
calls forth increased muscular growth, where
the demand is continuous, as in cardiac hypertrophy
from valvular disease; here, where the distention
is sudden and occasional, the muscle fails to
accommodate itself to the strain, and gives way, hence
the dilatation.
Clinical Features.

Among the chief characteristics of this disease is the constant heartburn patients experience after food, which continues until they are relieved by an attack of vomiting. They suffer a good deal of pain in the belly, but it is not so localized as in ulceration, and there is not usually any hæmatemesis: the whole abdomen feels sore, and vomiting is present throughout the twenty-four hours, in a greater or less degree. The vomited matters vary in amount from two to sixty ounces, and are of the nature described in Appendix 2, ad. fin. If there is any complication, e.g. ulceration simple or cancerous, then there may be blood, cancer cells, shreds of the jaundiced tissues,
and other matters among the ejecta —

The stomach is probably seldom entirely emptied as each act of vomiting: for if the patient be shaken afterwards, or the abdomen percussed and auscultated at the same time, a whistling sound will be elicited —

We generally find the stomach distended with gas, and there are many and螺丝welling contractions; patients complain of a feeling of fulness and distention in the abdomen, and there is an evident enlargement of the stomach, as made out by percussion. (3)

(3) It requires a little practice to distinguish between the stomach note and that of the intestines. — I do not see how this difference can be realistically described in words, though it is quite appreciable to the careful observer —
The patient is generally feeble, listless, and emaciated. The tongue moist and clean, or slightly furred. The appetite variable, inclination for food usually fair, sometimes inordinate, but there is a dread of satisfying it, from fear of the consequences. We often find the appetite good or even large. Where the dilatation is of local causation, and defective rather in those cases where the dilatation is a marked local result of a general cause, such as continued fever or endemic debility. Defect of appetite may in many cases be simulated, the patient's desire for food, being subordinate to his fear of the discomfort which food creates. Thirst is usually present, and is often excessive. The bowels are seldom regular, often constipated, occasionally diarrhoeic. Urine is often normal
as not in quality, but diminished in quantity, as in all cases of vomiting. Muscular debility is extreme, and cramps in the limbs and trunk are common.

Occasionally we observe the abdomen much distended at a particular point corresponding to the greatest vertical distention of the stomach when the patient is lying on his back.

The skin of the abdomen is withered and gathered into folds, which surround the visible bag of the stomach. If the trunk of the patient be sharply moved, or the stomach itself shaken by the hand, we hear the characteristic splashing very plainly: in some cases too, the stomach tube may be felt through the abdominal wall, lower down than the limits of an ordinary stomach would allow.
Sometimes, we see the superficial veins of the abdomen, large and prominent, and if the abdominal walls are thin, the movements of the stomach may actually be followed by the eye.

Causes of Dilatation

These may be variously classified, but all depend upon one of two principal causes:

(i) Obstruction to the onward passage of food through the pylorus.

(ii) Excessive distention, positive or relative, of the stomach.

The former may be brought about by cancerous stenosis of the pyloric orifice, with hypertrophy of submucous tissue; by non-malignant thickening of the pylorus, with enormous hypertrophy of its muscular fibres; by cicatrization of an ulcer, and this may lead to ulceration, or account
of even small hard things not being able to pass; by contraction of an ulcer and consequent pyloric obstruction; by external pressure of tumours; by action of corrosive substances; and probably by spasm of the pyloric outlet. Positive excessive distension is produced in an ordinarily healthy stomach by the ingestion of large quantities of indigestible food; such as suddenly gives rise to a large amount of gas. I believe I have seen dilatation produced in a schoolboy by forcing him alternately dissolved in water, powder of bicarbonate of soda, and tartaric acid, and closing his mouth while the unpleasant evolution of carbonic acid gas was going on inside. Relative excessive distension on the other hand, occurs only in an already
weakened stomach; where the patient is in a state of great exhaustion, hysteria, and perhaps long continued vomiting, phthisis, and the Chronic gastric catarrh produced by heart disease. Here we can easily understand why even a small amount of food should produce as serious a result as an enormous meal might do to a healthy stomach.

In some of these cases, the pylorus after death has been found quite open, even more so than normal: so that probably paralysis of nerve-power, degeneration of gastric muscle, and swine of pyloric orifice were all associated in producing the dilatation. Sometimes also it has seemed not unlikely that fever, that great degeneration of muscle, may have weakened permanently the contractile power of the organ,
and lastly, peritonitic adhesions are supposed by some to be a fertile cause of dilatation.

Influence of Sex and Age.

The disease occurs in both sexes:—usually in persons above 25 years of age, though cases have occurred much earlier in life.

Treatment—

We have to deal with an organ, upon the healthy action of which the functions of digestion and nutrition to a great extent depend:—and this organ when dilated always entails some decomposing and irritative material, which prevents the true secretion of gastric juice, and absorption of nutriment; besides, causing pain and vomiting. Could we only give the stomach entire rest for a long time, our way would be rendered—
comparatively easy,—but we are met at the outset by the constant necessity of using it, which many patients have an insuperable objection to. And if even this objection be overcome, we cannot go on for ever feeding by the rectum. We must be most careful in our choice of suitable diet, suitable medicines, and suitable hygienic conditions; but when we have exhausted all these, there is but little certainty of relief; and in the end we are generally obliged to fall back upon gastric catheterism, which if patient would more often allow us, is the best treatment to adopt at the commencement.

Galvanism has been recommended:—I can only say I have never tried it myself or seen it tried by others.
The tube should be used once a day, for the first day or two; then twice a day, once after rising, and again about 5 or 6 p.m.
In cases of malignant disease, we cannot of course hope for a cure; and in ulceration we are not justified in giving a positively favourable diagnosis; but even in these we may promise relief; and in simple urinary dilatation we may confidently expect a successful and permanent result.
With regard to diet, if the patient is able to tolerate any food in the stomach, we may recommend cocoa, milk, raw eggs, and thick soups, and Brand's essence of beef, in small quantities, frequently administered, with ice to suck, or lemonade to relieve the thirst:
but if, as is frequently the case, vomiting persists
after each meal, we must rely almost exclusively
for the time on strong emenates of beef tea and the like.
The medicinal remedies may be divided into
three classes: (a) Tonic, (b) Disinfecting, (c) Sedative:
- exemplified by (2) strychnia, quinine, hydrochloric
  acid, nitric acid, (3) sulphurous acid, nitric
  acid, salicylic acid, tartaric acid, the
  alkaline hypsulphites, and permanganate of potash.
(3) Bismuth tincture, francis acid and of trum.

Prognosis. This will vary with the cause of the
malady in each case. If of malignant origin,
it is hopeless; but if from irregularities of diet,
or weakening of nervous and muscular power by fever
or may hope for recovery, proportionate to the
thoroughness with which we remove the cause.
Case I  Malignant disease of the pylorus with dilatation of the stomach.

This patient was a spirit merchant, aged 40, who, according to his own account, had enjoyed good health up to August 1878. He consulted me in Feb. 1879 for 'wind in the stomach, and sickness and pain after food.' His general and family history was good; he had been a full liver, and a regular and moderate drinker of stimulants;—taking his glass of toddy at night, and a couple of glasses of sherry for dinner. He had a pale, flabby face, indented at the edges, and a forced, dry tongue, indented at the edges, and a forced, dry tongue, indented at the edges, and a forced, dry tongue, indented at the edges, and a forced, dry tongue, indented at the edges, and a forced, dry tongue. His teeth were much decayed. His expression careworn, and his complexion withered and sallow. His tendons were constipated, nerves system greatly debilitated, and general nutrition poor.
He told me he noticed his appetite fail him first about the end of July 1870, and he then began to feel 'a fulness' at the front of his stomach: - of late his appetite had become very capricious, that sometimes he felt a craving for food, at other times the thought of it produced a feeling of nausea: but that invariably about an hour or so after eating, he was seized with a violent attack of vomiting and pain in the stomach, and whatever he had eaten was rejected, together with more or less sticky phlegm. - The vomiting was not altogether dependent on the ingestion of food, for it sometimes occurred when no food had been taken previously. He had lived for the last six months chiefly on raw eggs, milk and cream. -
with some cold water or chloroform, to allay the excruciating pain from which he suffered.

His height was 5 ft. 11 in. weight 132 lbs.: in June 1870, he said he weighed 170 lbs.: and he was now feeling the diminution a good deal, and was fully conscious of his emaciated appearance.

From his appearance and symptoms, malignant disease of the pylorus at once suggested itself to me. I examined him carefully, and fancied I could feel a hard lump in the epigastrium: there was a diffused tenderness in the stomach and adjacent parts, but no specially painful spot anywhere. On percussion and auscultation I discovered that the stomach presented a very curious phenomenon. The patient was evacuating quantities of gas every few minutes, and immediately after
each excitement I could perceive a sensible diminution in size of the distended stomach; whilst at the termination of the interval that organ reached within half an inch of the navel. By shaking him gently from side to side, I could hear plainly a splashing sound such as water makes when shaken in a churn.

To my former diagnosis, I therefore added that of dilated stomach.

I suggested the use of the syphon-tube, to draw out her stomach, but he declined, and preferred to try what medicine could do to relieve him. I therefore put him on milk diet, (he would not hear of enemata,) recommended him not to take more than two or three ounces at a time, and ordered him a mixture containing bismuth.
hydrocyanic acid, and creasote, with three minia
doses of Tinctura Opii B.P.; and advised him to
keep a supply of ice constantly by him to check
the vomiting. He returned to me in three
days time, saying he felt worse; that he could
retain very little milk, and that the pain was
increasing. I again advised the orphon-tube
and vomiting enemata, and rather reluctantly
he consented. I introduced the tube, into
the usual result of producing severe coughing
and vomiting of strongyicensus, but no blood:

(5) at my request he sent me some of the vomited matters;
which on examination I found to be intensely acid,
containing large quantities of vaccinia and some
yeast fungus also. (for description of these vomited
fungi vide Note II - Appendix)
and washed out the stomach with a weak solution of sandy fluid, two drachms to a pint of water; and, could feel the point of the tube through the abdominal walls about the region of the navel.

He felt relieved after the operation, but much exhausted with the violent vomiting.

Repeated the process again next morning, and afterwards twice daily, for a month; keeping him alive in the meantime principally by enemata of beet tea, but allowing him also, small quantities of milk and Brand's essence of meat by the mouth.

The pain by this time was much lessened, and he had actually gained 2 lbs. in weight; but

For full directions as to the mode of using this instrument, see Note I. Appendix.
There was still some vomiting at times, which was always increased by a larger meal than usual, and there did not appear to be any real gain in strength; the disease seemed at a standstill, and the patient presented more nearly its normal condition.

As he was particularly anxious to discontinue the enemata, I ordered him, in addition to his former mixture, (which he was still taking at intervals,) twenty grains of sulphite of magnesia, dissolved in an ounce and a half of water, every three hours; and, recommended unfermented bread, with milk, cheese, and charocal biscuits.

I saw nothing more of him until July, when
he sent for me saying he thought he should not live much longer. — I found him in bed, terribly emaciated, his countenance presenting the peculiar cachetic hue and expression, which is so characteristic of the cancerous diathesis. — He told me that his weight in the previous week was only 116 lbs., that he felt much weaker, that the pain and vomiting were worse, and that he could get but little sleep. — I did not at this juncture advise the syphon-tube again, as it was evident that the end was not far off. — I could now, on careful palpation, make out a hard tumour, about the size of a bantam's eggs, one and a half inches above, and rather to the right of the navel.
From this time his downward course was very rapid, and the treatment was almost exclusively confined to ice, opium, and intermittent enemata.

Finally he sank and died on the 3rd of August. I was fortunate enough to obtain a post-mortem examination, and the appearances fully confirmed my previous diagnosis. At the necropsy I found the stomach enlarged to about twice its natural size, and containing a considerable amount of yeasty fluid. The pyloric portion was hard and enlarged, and felt gritty and elastic when squeezed. The serous coat was milky and clouded, as if with a subacute peritonitis. The tube of the pylorus was so contracted, that I could only just pass the small end of a
Tobacco had eaten through it; but the mucous membrane was not eroded, but appeared as if it had been entirely absorbed and replaced by a nodular ring of grayish-white cartilage. The colon was much displaced; it was partially overlaid by the stomach, and occupied the lower hypogastric region. I could not find any secondary deposits in the pancreas, liver, colon, or omentum, and the malignant disease seemed to have confined itself exclusively to the pylorus. (Microscopic examination showed the usual characteristic appearances of schirius). The mucous membrane of the rest of the stomach was attenuated, and with 1/4 inch object-glass I could find comparatively
few gastric tubes remaining:— these few being
intervened with fibrinous bands, and appearing
to be full of aatty debris.

Revealing the aspects of the case, it was evident,
that the dilatation was secondary to the ulcerous:
also that the washing out of the organ with Lodge's
fluid materially relieved the fermenting process,
so long as it was persevered in: and would
I believe have completely cured it, had no
malignant complication been present.

Moreover, I see no reason why removal of the
tumour might not have been attended with a
reasonable probability of success, as there was
no erosion or secondary infiltration, and
the cancer was distinctly localized.
Case II. Ulceration, and dilatation of the stomach, with malignant disease of the omentum.

This patient was a deafmutter, aged 48. She suffered from heartburn and vomiting, and violent pain in the stomach, this latter being most severe in the right of the epigastric region. She told me that these symptoms had been coming on for about six months, and growing worse every week. She was quite prostrate with the attack when I saw her first, in June 1879. She had twice vomited blood, and had been losing flesh for four months; she suffered pain if she fasted, and it was increased by taking food, and only relieved by vomiting. The vomiting generally came on immediately after a meal, but had occasionally been delayed some hours. Together with her food she vomited large quantities of a greenish sour liquid, a good deal of gas.
Her bowels were obstinately constipated, and her
urine scanty; her chest was healthy, tongue moist
and slightly furred, abdomen soft and contracted,
skin dry. The peristaltic movements of the
stomach were easily observed through the wasted
abdominal walls; and the stomach-noise was
recognizable down to the navel.
Ordered her a scruple of bicarbonate of magnesia
with fifteen grains of trinitrate of bichromate in
half an ounce of lime water, three a day,
and a soape enema: also five grain doses of
Hormann's papain powder with two ounces of milk
every hour; for she stubbornly refused to allow
her to use the diaplatube, or antacid enemata.
This treatment seemed to have no effect in
stopping the vomiting, though she thought the
pain was left severe. — The sulphurite, hypersulphurite, sulphurous acid, opium, binoxide of manganese, were tried, but with no better effect. I found in the treated motion, under the microscope, quantities of sarcinae fungi. — Surged her again that we try the diptheria tube, and she consented reluctantly. I treated her in this manner for eighteen days, and gave her no medicine; feeding her meanwhile by enemata of beet tea and chicken broth. She experienced a good deal of pain at first in the stomach when the tube was introduced, but gradually became able to bear it without much inconvenience. The vomiting was completely checked, and by degrees I got her back to a liquid stomach diet alone. Nevertheless, she gained her strength, but rather emaciated. The vomiting returned again, and
continued very severe; she became increasingly prostrate; hiccup was supervened, and coffee-ground vomiting, and she gradually sank four months after she consulted me. She formed a post-mortem examination, twelve hours after death.

The body was much emaciated; lungs and heart quite healthy; omentum buckleded: the characteristic changes were in the stomach, which was double its ordinary size, and the walls of which were thin and atrophied. Near the pylorus was a contraction of semi-antilagous hardness.

On opening the stomach an ovoid ulcer, two and a half inches by one inch in diameter, was seen to surround the contraction; its edges were rounded and elevated, and its base smooth.
On section the mucous membrane appeared to be continuous with the upper layer of the ulcer; its deeper layers were very firm, white, and fibrous around. The ulcer and its contraction, was a portion of healthy mucous membrane, which extended to a perfectly healthy phlegmon. So that the obstruction to the onward passage of food lay not in the phlegmon, but in the irritability of the ulcer, which caused the food to be rejected, before it had got into the phlegmon mass. In the omentum were several hard tumours, and the omentum itself formed a firm contracted mass, about the size of two fingers. On section these tumours were tough, contained a milky juice, and when magnified two hundred diameters, showed large cells with distinct nuclei, evidently cancerous.
All the stomach follicles were gone, over the smooth surface of the ulcer; in the deeper structure of which no cancer cells were observable, but only bands of fibrous tissue. The intestines, liver, spleen, and kidneys were healthy.

There was no doubt that she had suffered from ulcer of the stomach for a long time; and the malignant disease was probably secondary. There was not any trace of cancerous deposit at the ulcer itself; but the mental cancer may have been set up by the chronic irritation which took place in the adjoining glands and structures.

With regard to the treatment, in the present state of our knowledge of malignant disease, nothing but temporary improvement was possible: and this did follow, not however on the use of antiseptic drugs, but on the more heroic method of washing out the stomach with the siphon-tube.
Case 311. Simple dilatation of the stomach.

A postwoman, aged 43, single, consulted me in November 1879, for pain in the stomach, and vomiting after food. She was a pale, unhealthy-looking creature, with decayed and inefficient teeth, and a flabby, indented tongue. She menstruated profusely every three weeks; her bowels were obstinately constipated, and she passed less urine, than she used to pass, before this illness began. She could only get her meals at long intervals, as her occupation kept her walking for hours at a stretch; when she did get them she was accustomed to eat heartily, her favourite food being hot heavy cake, pasty, and weak tea. She used to drink two or three cups a day of this beverage. Her family history was good. After careful examination, I could find nothing wrong except in the stomach; but here I
discovered the point where—extending from the 4th intercostal space, to an inch below the level of the navel in the left subcostal line, i.e. about 7½ inches, and the stomach causing a visible prominence in the abdominal wall.

At intervals she would belch up offensive gas and be greatly relieved by this proceeding; and after each eructation, the abdominal swelling would grow less, until the gas had collected again. She suffered a good deal of heartburn, and was generally very thirsty. The pain was not limited to a small spot, but extended over the epigastric and umbilical regions, and was also felt in the intercostal space. Consequent on the vomiting she suffered from severe headache, and complained of great weakness in the legs. When her abdomen was shaken, and auscultated at the same time,
The splenches in the stomach were plain, audible.

I attributed her symptoms to impaired digestion caused by large, irregular, and unabsorbed meals, resulting in enlargement of the stomach cavity, and weakening of its walls; the pain being caused probably by stretching of the gastric nerves, from overdistension by the gas which was formed in greater abundance after food had been taken, and also by the muscular tensions produced by the incessant vomiting. I ordered her a milk diet, and an aromatic mixture containing, bromide, atropia, and pumice acid, three times a day, and a droochum and a half of Carlsbad salt every morning. A week subsequently (Nov. 24) she came again, and reported herself so better, but suffering from an attack of diarrhoea as well.
I prescribed some astringent powders, and ordered her a quenque mixture with nitric acid, and Morson's depain powder. The diarrhoea continued until the 26th, when it stopped, leaving her weaker, and her stomach still unable to take more than small quantities of milk. I advised rest in bed for an indefinite time, and to continue the mixture.

On Dec. 3rd, the diarrhoea returned again, but was soon checked with chlorodyne. She went on pretty well till Jan. 8, 1800, keeping in bed, and limiting herself strictly to a diet of milk, varied at times with barley water, and a raw egg.

On Jan. 8th, she complained that the pain in her stomach was acute, and she was ordered opium and belladonna tincture, which gave great relief. At her own request I permitted her to get up on Jan. 29th, but this experiment was followed
by a sharp attack of vomiting and diarrhoea into menorrhagia which sent her to bed again, and the pain and ecchymosis, which had been partially in abeyance, now returned as bad as ever. I had suggested a trial of the orphen-tube previously on two occasions, but she had been dissuaded by the solicitations of anxious friends, and also by a medical man of thirty years' standing, who assured her it would be the death of her, and seemed to think a mode of proceeding was altogether unprecedented!

At last on Feb. 8th I got the better of her fears, and introduced the tube, with the usual sequelae of nausea, retching, and vomiting of tough, green, frothy messes, but no blood. I used a point of break dressing of Lady's fluid; and after the operation, in spite of the violent streaming and vomiting, she
assumed we she felt much relieved. I continued this on the 6th and 7th. When she said she felt so much better, that she would get up and try to do without the washing out in the next day.

I therefore ordered her to take fifteen grain doses of hypoosulphite of soda every 4 hours: and to adhere as before to her simple diet. I may say here, that I had prohibited the use of tea, coffee and alcohol from the commencement.

She had a bad time of it on the 8th, and the medicine seemed to exert no salutary effect whatever. So at her urgent request, I resumed the tube on the 9th Feb., and discontinued the medicine.

The disturbance on the introduction of the tube gradually departed; and on the 15th Feb. she was able to walk half a mile to my house, to have the operation performed there. On the 22nd and 23rd she seemed much better,
had could take her food with little pain, and
no vomiting; and the formation of gas was now
reduced to a minimum. So on this day, Feb. 23rd,
I did not use the tube. It had however to be
resumed on the 24th, no disturbance was being
caused by its use, and was continued, once daily
until March 3rd, when I intensified the treatment
by siphoning the stomach morning and evening
instead of in the morning only, as hitherto:
and at each sitting I used two solutions, the first
being always either a weak solution of Sulphurous
acid. B. P. (H. 3/5 ad 8j aquae) or of Salicylic
acid (31/16 ad 8j aquae), and the second, pure
spring water. She also took a mixture
containing, Caraboad salt every morning
before breakfast. She gradually improved in
health and appearance, and by April 7th.
had gained 5 lbs. in weight. (She weighed 125 lbs. on Nov. 17th, 1879, and 130 lbs. on April 7th, 1880.)

I now discontinued the evening washing; and on April 16th I provided her with a tube herself; and altered the solution to the original one of Condy's fluid. She persevered in this treatment until the 22nd of May; then used the tube only every other day, and finally discontinued it entirely on the 2nd of June; being now free from pain, flatulence, and vomiting, and able to eat a plain simple meal without annoyance to herself or her friends. At the present time, Mar. 24, 1881, she enjoys capital health, walks on an average ten miles a day, weighs 137 lbs., and says she has not felt so well for 20 years. No nutrient enemata were used in this case.
Case IV - Dilatation of the stomach, depending perhaps on previous ulceration.

E.C. aged 37, a mechanist, complained of heartburn after eating, followed in a short time by nausea, pain in the stomach, itching and vomiting. He was pale and emaciated, with bad teeth, and looked much out of health. Beside her food she vomited a brownish sticky liquid, which varied in quantity from one to two tereusfuls. Her family history was unimportant. Her present illness had come on gradually, with flatulence and distension after food, and a feeling of fulness. Journe pale and moist, bowel consistence: menstruation and urine scanty. On examination I found the stomach extending an inch below the navel, and the cutaneous abdominal veins well-marked, though the
skin of the abdomen was not tense, but ruffled and internally. — The amount of gastric distension varied, but not apparently inversely to the amount of emaciation, and was never constant for more than five minutes together. — She told me that some years ago, she suffered a good deal of pain after food, and had also occasionally vomited blood. — I could not define the pain more exactly than over the whole area of the stomach, and from this fact as well as the knowledge that no blood had been vomited for several years, I was inclined to think that I had a case of simple dilatation to deal with, caused perhaps by a previous ulceration and cicatrization. — Happily there has been no opportunity of verifying this diagnosis by postmortem examination.
She consented to let me try the diaphragm tube, and feed her by the bowel, without any previous course of medicine, except a dose of Carlsbad salt every morning for ten days; and I used it once a day for three days, and afterwards twice daily. Perfect toleration did not ensue in her case for a week, but she was able to use the tube herself at the end of a fortnight, when I discontinued the enema, and recommended that she should take some liquid food in small quantities frequently during the day: choosing such things as cocoa, milk (with or without soda or lime water), and farinaceous foods, and avoiding tea, coffee and alcoholic beverages. The progress of her case was uneventful: after the months’ treatment she was able to discontinue with the tube, and take ordinary food, without pain or annoyance, though only in small quantities at a time.
Appendix. No I. Method of using the siphon-tube.

For this operation we require (i) a soft esophageal tube 2/4 in length; (ii) three or four feet of stout indiarubber tubing 3/8 inch in diameter, weighted at one end with half a rich of leaden pipe. (At first I made use of the ordinary red composition stomach tube, but finding that this became sodden and liable to crack with much wear, I substituted for it one made of blackish-green French composition, after the style of the French catheter, Condé's, as being more reliable, safer for the patient's own use, and of greater durability. These tubes were made for me by Farris, Boorne, & Tomason, of Bristol.) The patient should be seated in a chair, under a shelf, a foot and a half above his head.
On the shelf I place a pint flask, graduated measure, of solution, and immerse in it nearly the whole of the india-rubber tubing, coiling it inside the flaps. Then in a couple of minutes, I withdraw the coiled tubing, allowing the lead-weight to retain a piece of it inside the solution & the bottom of the measure, and simultaneously introduce the asphalpetal tube into the patient's stomach.

The solution being thus set in action by the siphon, soon begins to flow downwards, into the stomach, until the flaps measure is emptied. Then at once, pinching the tube tightly just above the lead, I take the flaps-measure from the shelf, and place it on the floor, release the soft tube, and the liquid returns by reversed action into the flaps, again, bringing with it any fermenting material, that the stomach may contain.
The operation may be performed once, twice or three times at each sitting, until the solution returns clear and neutral. Use various solutions, the principal of which are the following,

1. Acid Sulphur. dil. B.P. 3
   Agnam ad 0.7

2. Lig. Potas. Pennyw 3
   Agnam ad 0.7

3. Acid. Nitric. dil. 3
   Agnam ad 0.7

4. Acid. Salicylic. 3
   Ag. destill. 0.7

And complete the sitting with a pint of good spring water. As a rule, after the first few sittings, the operation is performed without any inconvenience to the patient.

It has been questioned whether the suction tube is sufficient to remove the whole of the contents of the stomach, both solids and liquids. Some of the German writers maintain that liquids only are removable by this means; and that...
The stronger suction power of the stomach pump is necessary.

I have never tried any mechanical means except the siphon-tube, and have always found hitherto, that free irrigation will break down lumps of bread, potato etc., which are then brought back through the tube, or sticking in one or other of its eyes.

I have brought up many pieces thus; and I have never noticed any splashing in the patient's stomach after the operation has been carefully performed.