

Metastasis often follows rapidly on an incision. It seems best to open the scrotum and then, if we should find an infiltrated hydrocele, the procedure is simple, but if we think that the growth is malignant we can make a frozen section and determine its nature at once; if it is malignant, we must take out all the glands as far as possible retroperitoneally.

DR. HUGH CABOT, Boston: In regard to the management of the vas the point to be remembered is that the involvement of the vesicle and the prostate bears no relation whatever to the involvement of the vas. The process does not reach the vesicle and prostate by continuity, but, as I believe, by the lymphatics. It is not easy to determine the amount of involvement of the vas. You will often find nodules separated by two or three inches. The infection has stopped at certain places along the lymphatics and invaded the vas. I have been disagreeably surprised to find little nodules along the vas far above the point I had suspected, and it has seemed to me that the removal of the accessible portions of the vas is important. I doubt whether the injection of any substance through the vas has any particular effect on tuberculosis of the vesicle, because the process is not in the lumen but in the wall. The vesicle is involved from without, not from within. Certain it is that the removal of the vas in this way—we have been doing it for years—has left the patients much more comfortable, and I must see something other than theoretic reasons for changing my views.

The involvement of the second side is an interesting problem. I do not believe that there is any reason for regarding it as an involvement by continuity. I believe that the process reaches the prostate and the vesicle by the lymphatics, and that it reaches the second epididymis by the lymphatics or by the blood-stream. I do not believe that it walks up one side and down the other any more than I believe that this is the common method of transference of the gonococcus. We want to remember that Keyes' statistics and other large statistics, including a series of one hundred cases by Dr. Barney, show that involvement of the second side must be expected in 50 per cent. of the cases within two years. This might as well be taken into consideration from the first.

It has seemed clear that the leaving of the testicle is important. The testicle is valuable for three reasons: In the first place, it forms spermatozoa. We must recognize at once that those patients with involvement of one epididymis in tuberculosis are sterile as demonstrated by Keyes, Barney and by foreign observers, so that, so far as the spermatogenic function is concerned, we may drop it; but nobody to-day, I think, doubts the presence and the value of the internal secretion of the testicle. The third factor in regard to the testicle is its psychic value to the patient, apart from the internal secretion. The average man is much interested in his testicle, and for what seems to me perfectly sufficient reasons. Now what is the logic of the old method of orchidectomy? If you begin by taking out the first testicle, the patient is liable to put a hard problem up to you or somebody else by coming around with the other testicle involved so that you ought to take that out, and then he refuses to have it done. The logical thing is to leave what is there accessible, not seriously damaged, and take your chances on the other side.

Dust.—There is no substance on the face of the earth which does not enter into the composition of dust. In the home there are particles of furniture, clothing, foodstuffs, animal and vegetable matter, bacteria, particles of wall-papers, plaster, iron and other metals, carpets, rugs, books and everything in the process of nature's decay contributing its quota of dust. In the street all the foregoing are in evidence in the dust, also particles of steel and iron from the wearing of wagon-wheels and horseshoes, gold, sand, stone, hair, excreta, clay, minerals of every kind, bacteria, leather skins, plant life, animal life of many kinds—in fact, there is nothing imaginable which does not contribute to the dust of the earth, and many thousands of dust particles may be found in every cubic inch of the air we breath.—*Bull. Winnipeg Dept. Health.*

CHRONIC STENOSING GASTRITIS *

HORACE W. SOPER, M.D.

ST. LOUIS

Chronic stenosing gastritis was recognized and described by both Andral¹ and Cruveilhier² in 1829. Since that date much discussion has ensued among pathologists as to the nature of the process, some maintaining that it is always a malignant or cancerous condition, others that a benign inflammatory stenosis may occur. Among the synonyms found are "chronic interstitial gastritis," "sclerosis of the stomach," fibroid induration, "hypertrophic stenosis of the pylorus," "cirrhosis of the stomach" or "linitis plastica." The term "*Schrumpfmagen*" has been most commonly employed in Germany. Von Sury³ distinguishes two forms, a carcinomatous and a simple inflammatory type. He defines the latter as a primary increase in the thickness of the stomach wall, produced by a connective-tissue hyperplasia involving the submucosa and subserosa, the capacity of the stomach being diminished by a secondary contraction of the newly formed connective tissue. In a very exhaustive and critical review of the literature, he concludes that the etiologic factors involved in the simple inflammatory type are round ulcer, gastritis phlegmonosa, chronic gastritis, chemical irritants, syphilis, polyserositis occurring in passive congestion in diseases of the liver, heart and lungs, chronic peritonitis, primary *Zuckergussleber* of Curschmann, and trauma.

Congenital hypertrophic pyloric stenosis is not considered here, inasmuch as this condition appears to have no relationship to the etiology of the benign stenosis occurring in adults.

While one cannot deny that the before-mentioned etiologic factors can result in the pathologic process known as simple inflammatory contracted stomach, or *Schrumpfmagen*, nevertheless for clinical reasons it would seem best to restrict the term "chronic stenosing gastritis" to those cases in which a long-continued gastritis has been the causal factor. I shall therefore consider only this simple form, in which the stomach alone is involved. A few have combated this view, notably Charles F. Martin,⁴ who takes the position that chronic gastritis has no etiologic relationship to simple contracted stomach. He agrees with Brinton and terms the process linitis plastica, or cirrhosis of the stomach. He considers it due to an overgrowth of connective tissue, such as may occur in any part of the body, caused by unknown irritants.

Von Sury shows that all the careful modern histologic studies of cases reveal the fact that the mucosa as well as the submucosa and subserosa is involved in the inflammatory process, and that pathologically it must be considered as a true gastritis. He particularly emphasizes that the passive congestion occurring in heart failure is a distinct etiologic factor in producing a polyserositis involving the stomach and other abdominal organs, and that Curschmann's *Zuckergussleber* is allied to this process. It is clear that clinically we may exclude cases of this class as well as general chronic hyperplastic peritonitis. Hemmeter refers to the confusion existing in the literature and points out that many cases of ulcer

* Read before the American Gastro-Enterological Association, Washington, D. C., May 6, 1913.

1. Andral: *Précis d'anatomie pathologique*, Brussels, 1829, II, Part 1, p. 46.

2. Cruveilhier: *Anatomie pathologique du corps humain*, 1829-1835, II, Books 12 and 27.

3. Von Sury, Kurt: *Beitrag zur Kenntniss der totalen, einfach entzündlichen Magenschrumpfung und der fibrösen Polyserositis (Zuckerguss)*, Arch. f. Verdauungskr., 1904, xII, No. 1, p. 1.

4. Martin, Charles F.: *Osler's Modern Medicine*, p. 311.

cicatrices have been reported under the term chronic stenosing gastritis. It is obvious that trauma cannot be considered as an etiologic agent.

The cases of Hemmeter and Stokes,⁵ Einhorn,⁶ Reigner,⁷ Gross⁸ and others make it clear that syphilis may produce contraction and stenosis of the stomach, which is extremely difficult to differentiate from the condition caused by chronic gastritis. It is probably better, however, to consider this form as only one of the several manifestations of gastric syphilis.

Primary chronic stenosing gastritis, therefore, always results from a long-continued, chronic inflammation. The hyperplasia affects chiefly the pyloric half of the stomach and ultimately results in a diminution in the lumen as well as a narrowing of the pylorus.

The symptomatology is that usually observed in the progress of an ordinary chronic gastritis, except that signs of stenosis gradually appear. In late cases, hydrochloric acid is absent and lactic acid and Oppler-Boas bacilli are often present. Nothnagel mentions that a smooth indistinct resistance may often be palpated. The differentiation from diffuse scirrhus carcinoma may be difficult, as both may give the same stomach content findings. Occult blood is often absent in this type of carcinoma, as well as in chronic stenosing gastritis. The anamnesis and the course of the disease are the determining factors. Recently S. Jonas⁹ has asserted that the Roentgen ray will show an insufficient or gaping pylorus in diffuse scirrhus carcinoma.

The stenosis caused by ulcer scar is totally different in clinical manifestations. The presence of hydrochloric acid in the fasting stomach should alone be sufficient to differentiate.

In the vast majority of cases, the diagnosis has been made at necropsy. Even here, difficulties are encountered. Von Sury demonstrates that the endothelial cells of the lymph vessels may assume a peculiar cuboidal form which closely resembles epithelial cells. On the other hand, the epithelial cells may be so few in number as to escape detection in true diffuse carcinoma.

Excluding syphilis and doubtful cases, such as ulcer scar, diffuse carcinoma, etc., the writer limits the number of genuine cases of chronic stenosing gastritis to twenty-nine.

Tilger¹⁰ tabulates twenty-three cases; of this number, four occurred between the ages of 20 to 30, seven between 30 and 40, six between 40 and 50, two between 50 and 60, two between 60 and 70 and two over 70. Boas¹¹ three patients were aged 32, 43 and 47, Hemmeter's¹² four patients 23, 28, 36 and 38 years.

REPORT OF CASE

Patient.—A farmer, aged 36, good family history, came under my observation in April, 1910. He had an attack of acute articular rheumatism at age of 14. He uses no tobacco, but had been a steady moderate drinker since the age of 20, averaging three glasses of whisky a day. During

the past year he had abstained entirely from alcohol. No history of syphilis. His stomach trouble began twelve years ago; at first, only discomfort and eructations of gas after eating; eventually, nausea and vomiting appeared; never any pain. These symptoms with the usual remissions and exacerbations have persisted since. Six years ago a test-breakfast was given and he was told that he had no hydrochloric acid in the stomach contents. For the past year his appetite has failed, and he has been obliged to resort to liquid and semi-solid foods in small quantities. Solid foods as well as large quantities of liquids always produce nausea and vomiting. His strength has failed and he is no longer able to do his work.

Examination.—He is a sparely built man, 5 feet 9½ inches in height, weight 117 pounds. Maximum weight twelve years ago, 135 pounds. He is somewhat anemic looking. Chest reveals nothing abnormal. Abdomen, rather narrow epigastric angle, very little fat, strong musculature. The entire epigastrium is tender to pressure. Tendon reflexes normal. Pupils

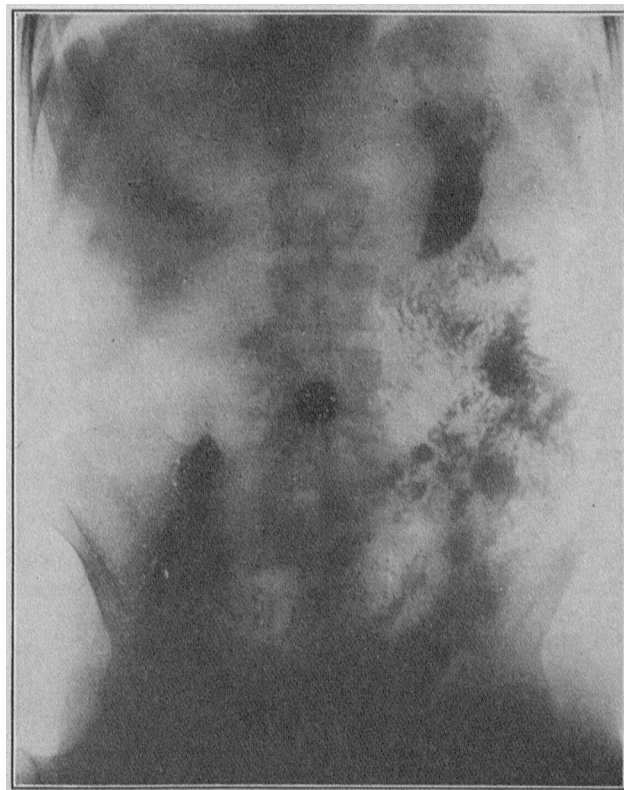


Fig. 1.—View of gastro-intestinal tract, taken immediately after the ingestion of 500 c.c. of bismuth and fermented milk. Note the extensive dissemination in the small intestine. This and the following radiograph were taken by Dr. R. D. Carman.

respond well to light and accommodation. A Ewald-Boas test-breakfast, 60 c.c. Chyme, bad. Much stomach mucus. No hydrochloric acid. Total acidity 8. No rennin, no lactic acid, no long bacilli. Fasting stomach contents, 30 c.c. of yellow turbid liquid; no fetor; no food residue; no hydrochloric or lactic acid. Microscopically there are many pus-cells and squamous epithelial cells. The feces on vegetable diet show no occult blood. Schmidt's test-diet shows a good utilization of the starches, fats and proteins. Blood: Hemoglobin 60 per cent. No leukocytosis. Red-cells 3,500,000, well filled. No poikilocytosis. Wassermann reaction negative.

Urinalysis: The urine is scanty, but otherwise normal.

Treatment.—He was dieted carefully, but grew progressively worse and was confined to bed. Even liquid foods in small quantities were vomited. In June, pyloric stenosis was suspected as the fasting stomach showed small quantities of stagnating food remnants. Lavage produced considerable relief. Roentgenograms could not be procured as the patient

5. Hemmeter and Stokes: Chronische hypertrophische Gastritis syphilitischen Ursprungs, etc., Arch. f. Verdauungskr., 1901, vii, s. 313.

6. Einhorn, M.: Ueber Syphilis des Magens, Arch. f. Verdauungskr., 1900, vi, s. 150.

7. Reigner: Cited by Von Sury: Syphilitische und alkoholische Sklerose, angehend vom obersten Teil des Dünndarms mit Verschluss der Lichtung, Jour. de méd. de Paris, 1898.

8. Gross, H.: Die syphilitische fibröse Magen und Darmstrikatur, München. med. Wchschr. 1903, No. 4.

9. Jonas, S.: Zur Diagnostik des Schrumpfmagen, Wien. med. Wchschr. 1909, No. 5, s. 262.

10. Tilger, A.: Ueber die stenosierende Pylorushypertrophie, Virchows Arch. f. path. Anat., 1893, cxxxii, s. 290.

11. Boas: Ueber hypertrophische Pylorusstenose (stenosierende Gastritis) und deren Behandlung, Arch. f. Verdauungskr. 1898, iv, s. 47.

12. Hemmeter, J. C.: Diseases of the Stomach, 1911, p. 618.

could not retain the bismuth meal. In July his weight was reduced to 102 pounds. Lactic acid and Oppler-Boas bacilli were frequently found in the stomach contents. The pus increased in quantity. The glycytryptophan test was negative. Hemoglobin 35 per cent. The blood-smear showed no signs of pernicious anemia.

August 3: Operation by Dr. Willard Bartlett. The stomach was found to be small and presented a peculiar feeling of resistance. The serosa was thin and smooth, the pyloric region was particularly hard but was smooth and uniform. Anterior gastrojejunostomy was done. The stomach wall was $\frac{1}{2}$ inch in thickness and was difficult to cut through. The

pylorus, 1 inch. The food passes very rapidly out of the gastro-intestinal stoma without any intermittence. Very small masses pass intermittently out of the pylorus. There is no peristaltic wave visible; the stomach moves up and down when food is introduced, making an excursion of about 1 inch, not synchronous with respiration. The roentgenograms were taken as rapidly as possible, Figure 1 immediately after the bismuth suspension was drunk, and Figure 2 as soon as a second plate could be put in position.

The rapid dissemination of the bismuth in the small intestine is clearly shown. This is probably due to the gaping of the incision in the thick wall of the stomach.

The patient continues in excellent health, and considering the history of the case and the course of the disease subsequent to the operation, the possibility of carcinoma is probably not to be considered now.

The roentgenograms were taken by Dr. R. D. Carman.

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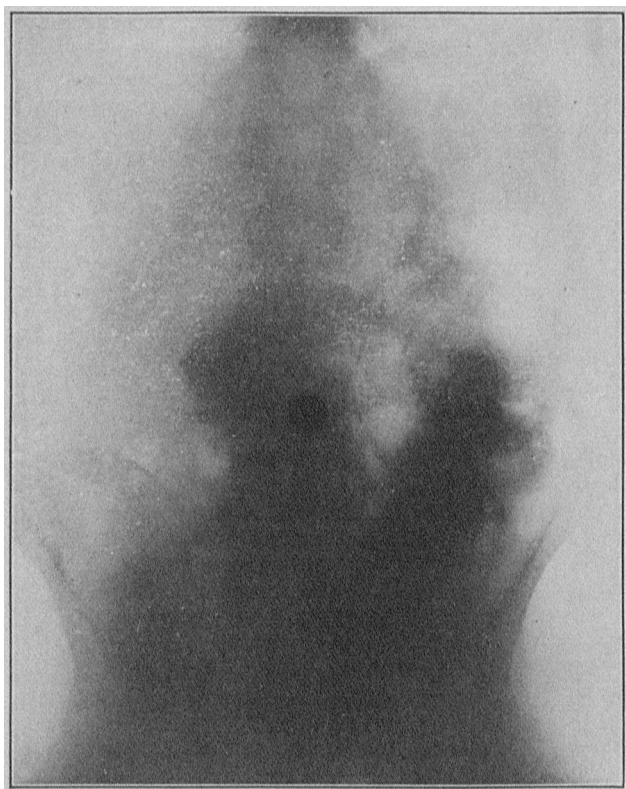


Fig. 2.—Same subject; picture taken immediately after No. 1. Very little of the bismuth mixture remains in the stomach.

incised surface presented a white, almost cartilaginous appearance. The mucosa was thin and anemic looking. The pylorus would not admit the end of the finger. Considerable difficulty was experienced in applying the sutures because of the toughness of the stomach wall. The patient made a good recovery.

Sept. 9, 1910: Weight, 111 pounds. Able to take liquid food without discomfort, no more than 4 ounces at a feeding. Roentgen fluoroscopy: The stomach is small, the bismuth and fermented milk mixture is swallowed slowly and passes at once out of the gastro-enterostomy stoma, so that it is impossible to obtain a view of the stomach contour.

Dec. 20, 1910: Improvement continued, weight 125 pounds. The patient is able to take semisolids and 8 ounces of liquids at a feeding. Fasting stomach contents, 20 c.c. bile-colored liquid, no food residue, no hydrochloric or lactic acid, no pus cells, no long bacilli.

June 13, 1911: Weight 130 pounds. Patient takes larger quantities of foods, but cannot tolerate meats. Test breakfast, 40 c.c. Chyme bad, much stomach mucus, slightly tinged with bile, no hydrochloric or lactic acid, no long bacilli. Fasting stomach contents, 15 c.c. bile-colored liquid, no hydrochloric acid, no food residue, no pus.

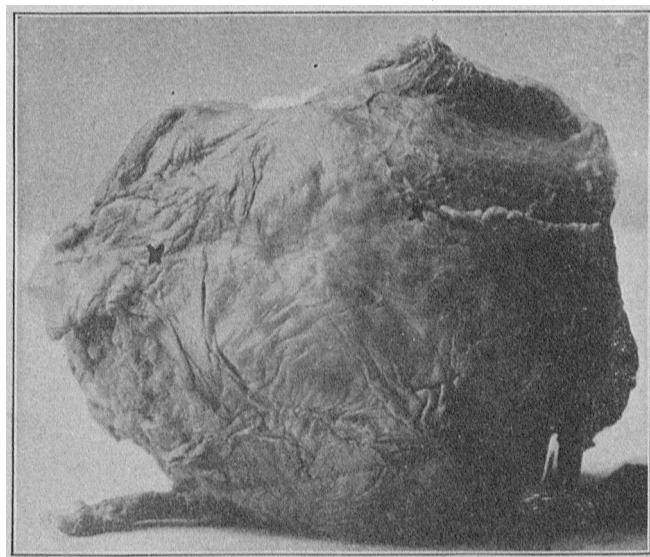
September, 1912: Weight 130 pounds. Stomach content findings same as last time. Hemoglobin 75 per cent. Roentgen fluoroscopy reveals stomach dimensions after rapidly drinking 1 pint of the bismuth suspension to be: length from cardia to lower pole, 6 inches; width near cardia, 3 inches; width near

BLADDER SUTURE FOUR YEARS AFTER OPERATION

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About three years ago¹ I described a case of intraperitoneal rupture of the urinary bladder in which operation was performed seventy-seven hours after the receipt of injury. The patient made a good recovery and was entirely free from any bladder symptoms subsequently.

Four years after the operation the man died of pneumonia and the bladder was removed at the post-mortem examination. There were no adhesions along the suture line. The scar of the rupture is represented by a thin line $2\frac{1}{4}$ inches in length. At the time of the operation the rent easily admitted



Bladder, showing scar of operation done four years previously for intraperitoneal rupture. The scar extends from points x to x.

four fingers. An additional point of interest is the fact that a careful search failed to reveal any trace of the continuous silk suture used at the operation.

1. Judd, J. R.: Rupture of the Urinary Bladder Operated on Seventy-Seven Hours after Injury, *THE JOURNAL A. M. A.*, April 9, 1910, p. 1207.

Coal-Mine Accidents.—The risk of coal mining is greatest during the winter months, when the liability of serious mine explosions is increased by the drying of the mines through the entrance of air below the temperature of the workings. —Horton, *Bull. Bureau of Mines*.