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The Value of Gastroscopy as a Diagnostic Aid in Gastric Lesions*

By

JAMES TESLER, M. D., M. Sc. (Med.)**

BROOKLYN, N. Y.

DESPITE THE strides in gastroscopy that took place since the invention of the flexible gastroscope in 1932, and not withstanding the great service that this diagnostic procedure can and does render in many perplexing clinical problems, this method of examination has not as yet become common knowledge or practice. It is in the hope that a larger body of practitioners will make use of gastroscopy, that this paper is presented.

Gastroscopy should be used by the gastroenterologist and internist just as cystoscopy is employed by the urologist.

The indications and contra-indications for gastroscopy were definitely established by such well-known gastroscopists as Schindler (1), Ortmyer (2) and Barnett (3).

It should be mentioned that the most important real contra-indications, obstruction of the esophagus or of the cardia, should not be excluded by the X-rays alone because sometimes they fail to show the obstruction. The thick Ewald tube should therefore be routinely introduced.

DANGERS

In 1940 Schindler (4) reported the results of a questionnaire concerning fatalities in relation to gastroscopic examinations. In all, 22,351 gastroscopic examinations were reported. In this series there were eight perforations of the stomach and one of the jejunum, but none of these terminated fatally. One patient died nine days after the examination, but whether the latter was directly responsible for the fatal outcome could not be definitely established. Another fatal case was reported by Paul and Lage (5) which was the 539th

gastroscopic examination performed at the University of Iowa. Others have recorded complications, none of which were fatal (6). Thus the fatality of gastroscopy is practically negligible.

The following ten cases were selected from more than two hundred patients that I gastroscoped at the Cumberland and Brooklyn Jewish Hospitals.

Everyone of the cases reported below was a problem clinically, roentgenologically and gastroscopically. I hope that they will serve to further illustrate the uses and limitations of gastroscopy as a diagnostic aid.

As there have been voluminous reports by gastroscopists on the diagnosis of gastritis by gastroscopy, I found it superfluous to include cases of this kind.

Case 1. A. P., age 48, female, white, housewife, was admitted to the Cumberland Hospital on December 29, 1939, complaining of intermittent epigastric pains for four years. Prior to admission to the hospital, her pains had increased in severity and frequency, coming on every four hours and awakening her at night. They were aggravated by solid foods and relieved by milk or cream. Her appetite was poor and there was a tendency to constipation. There was no evidence of bleeding into the stomach or bowel.

Abdominal examination revealed tenderness in the right upper and both lower quadrants.

The provisional diagnosis was peptic ulcer.

X-ray studies of the gastro-intestinal tract on February 2, 1940, were indicative of a duodenal ulcer. The patient was discharged on February 8, 1940, condition improved.

She was readmitted to the hospital on May 5, 1940, complaining of abdominal pains which were relieved by vomiting for 24 hours preceding her admission.

Abdominal examination revealed tenderness in the epigastrium. The clinical impression was the same as on the previous admission.

Fluoroscopic and radiographic studies of the gastro-intestinal tract on May 22, 1940, resulted in the diagnosis of periduodenitis or periduodenal adhesions with a possible gastric ulcer.

Gastroscopic examination on June 5, 1940, revealed a deep erosion, 1½ cm. in diameter with a grayish-green

*From the Medical Services and Gastrointestinal Departments of the Cumberland and Brooklyn Jewish Hospitals.

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floor, situated in the pre-pyloric region, just above the angulus on the lesser curvature and near the anterior wall of the stomach. The edges were sharply outlined and slightly elevated. The surrounding mucous membrane was congested and edematous. The rest of the stomach showed evidence of hypertrophic gastritis. This was interpreted as a penetrating, benign, gastric ulcer.

The patient was treated medically and gastroscopied again on June 19, 1940. The ulcer described on the previous examination was definitely smaller and showed signs of healing. The patient at this time was symptom free.

Radiographic study of the gastro-intestinal tract on June 26, 1940, revealed a permanent deformity of the duodenal bulb indicative of duodenal ulcer. No mention of a gastric ulcer was made.

A third gastroscopic examination done on July 3, 1940, showed the ulcer on the lesser curvature, practically healed; only a scar remained.

Analysis of the gastric contents revealed fasting free—HCL—50 units, total HCL—65 units. After histamine, free HCL—100 units, total HCL—120 units. Other laboratory findings were negative.

The patient was discharged on July 1, 1940, apparently well.

A roentgenographic study of the gastro-intestinal tract made on January 1, 1941, resulted in the diagnosis of a healed duodenal ulcer. There was no evidence of a gastric ulcer.

The patient was readmitted to the surgical service of the Cumberland Hospital on November 30, 1941, for a gynecological condition and on December 2, 1941, a supracervical hysterectomy was performed.

Following the operation, the patient coughed and vomited a great deal after meals, which resulted in a wound evisceration and shock on December 9, 1941. She died on December 10, 1941, and came to post-mortem examination on December 11, 1941.

Post-mortem findings:

The stomach showed numerous prominent rugae. A calloused ulcer on the lesser curvature at the incisura angularis, measuring 2 by 1 cm. in diameter, was noted. No ulcer of the duodenum was found.

Comment:

In this case, the gastroscopic examination, not the X-ray, revealed the existence of a gastric ulcer. Furthermore, the gastroscope was of value in following the progress and course of this lesion.

Case 2. S. I., age 60, Norwegian, was first seen in the gastro-intestinal clinic of the Cumberland Hospital on September 13, 1941. He complained of dull, epigastric pains for the past year. They began with the intake of food and lasted fifteen to twenty minutes. The pains were confined to the epigastrium, did not increase in intensity, nor did they occur during the night. There was no history of nausea, vomiting or pyrosis. The bowels were markedly constipated but no blood was noticed in the stools. The patient's appetite failed for the past year and he lost 12 lbs. in the past six months.

Abdominal examination revealed a resistance in the right upper quadrant and epigastrium which suggested an underlying mass.

The primary diagnostic requirement was the exclusion of a gastric carcinoma.

The gastric contents were examined and showed free HCL—20 units, total HCL—30 units.

Fluoroscopic and radiographic studies of the stomach and intestines on October 2, 1941, were interpreted as possible early carcinomatous infiltration. Another X-ray series taken on October 27, 1941, revealed no evidence of peptic ulcer or new growth in the stomach or duodenum.

Gastroscopic examination on December 6, 1941, showed

an infiltration of the mucous membrane over the greater curvature extending from the antrum to the mid-portion of the stomach. The impression was: Malignant infiltration (carcinoma) of the greater curvature of the stomach.

The patient was admitted to Mount Sinai Hospital, New York, on December 14, 1941. After abdominal examination, a mass to the left of the median line was suspected.

Roentgenographic study of the stomach and intestines showed a filling defect along the greater curvature which was interpreted as carcinoma.

Exploratory laparotomy was done and enormous, giant rugae were found in the body of the stomach, which resembled a carcinoma. An incision was made into the stomach, the latter was explored, but no evidence of carcinoma was found.

The patient was discharged on January 24, 1942, in good condition. He was last seen in our clinic on January 6, 1943, feeling fine.

COMMENT

This is a case where all our diagnostic methods, including gastroscopy and X-ray, failed to establish a correct diagnosis. Exploratory laparotomy clarified this diagnostic problem.

Case 3. M. H., age 56, white, male, single, ship worker, was admitted to the Cumberland Hospital on April 9, 1942.

Three or four months before admission, he began to suffer from abdominal pains, progressively increasing anorexia, tarry stools, weakness, constipation, regurgitation of bitter material and a weight loss of 30 lbs. At the onset, the pains came immediately after the intake of food. On the admission to the hospital, the pains were continuous and extended from the left flank to the epigastrium. He rejected all foods, especially solids.

Physical examination:

The left upper quadrant of the abdomen was tender. No masses were visible or palpable. Rectal examination was negative.

The clinical opinion was carcinoma of the gastro-intestinal tract, probably in the stomach.

Radiographic examination of the gastro-intestinal tract on April 15, 1942, revealed a gross intrinsic defect on the lesser curvature of the stomach. The presumptive diagnosis was carcinoma.

Gastroscopic examination on April 18, 1942, revealed a grayish nodular infiltration of the mucous membrane on the lesser curvature, in the pre-pyloric region, reaching to the anterior wall and probably the greater curvature of the stomach. The infiltration involved the body of the stomach almost to the cardiac end. The reasonable inference was that we were dealing with a malignant infiltration of the inoperable type.

Analysis of the gastric contents before and after histamine revealed no free HCL. Examination of stools for occult blood on three occasions was positive.

Based on the X-ray findings, the patient was operated upon.

Postoperative diagnosis:

Inoperable carcinoma of the stomach with metastasis to the regional lymph nodes, liver and spleen.

COMMENT

In this case the X-ray and the gastroscopic findings were in agreement as to the nature of the lesion. However, the gastroscopic description was more detailed as to the extent of the pathology and therefore as to its inoperability. The surgical findings were consistent with the gastroscopic diagnosis.

Case 4. T. M., age 57, white, male, was admitted to the Cumberland Hospital on February 18, 1943.

Three weeks before admission, the patient began to suffer from constant epigastric pains associated with pyrosis. The pains were not related to food and not relieved by alkalis. He had lost 6 to 8 lbs. during the past few months. In the last few days, the patient had been coughing up small amounts of dark blood. He also noticed abnormally dark stools.

Physical examination revealed nothing abnormal.

This patient was referred to me for gastroscopy with a clinical diagnosis of malignancy of the stomach.

Fluoroscopic and radiographic examination of the gastro-intestinal tract on March 3, 1943, resulted in the following opinion: "There is a suggestion of a small malignant tumor in the pyloric region."

Gastroscopic examination made on March 6, 1943, disclosed no pathology.

The stool examination for occult blood on two occasions was negative. Gastric analysis—fasting specimen—free HCL—38 units, total HCL—40 units.

Another X-ray series was made on March 24, 1943, and now was interpreted as "a polypoid structure rather than a carcinoma."

The patient was operated on and no pathology in the stomach was found.

A specimen of the partly resected stomach was diagnosed histologically as gastritis.

COMMENT

This case was diagnosed clinically as gastric malignancy. Roentgenological examination on two occasions was inconclusive, in fact, erroneous. The gastroscopic examination revealed no gross pathology of the stomach and at operation no pathology of the stomach was found. This striking instance illustrates the inestimable value of gastroscopy as an aid in the diagnosis of gastric lesions.

Case 5. W. C., age 56, white, male, chauffeur, was admitted to the Cumberland Hospital on May 14, 1941.

The patient began to lose his appetite four months ago. For the past three weeks, he vomited occasionally after meals, which became more frequent at the time of admission. Twelve days ago, he began to suffer from a gnawing pain just above the umbilicus. It came on from one to one and a half hours after meals, was severe and was somewhat relieved by vomiting but not by food or alkalis. He had lost from 20 to 25 lbs. and complained of weakness. There was a history of dark stools, although on the day before admission the stool was not black.

Physical examination revealed no masses or tenderness when the abdomen was palpated. Rectal examination was negative. The provisional diagnosis was carcinoma of the stomach.

The radiologist's report dated May 28, 1941, was as follows: "A narrowing of the pyloric region due to the presence of an ulcerating neoplasm." Another series was made on June 4, 1941, and now a juxta-pyloric ulcer on the gastric side of the lesser curvature was diagnosed. The possibility of an associated malignancy was considered.

Gastric analysis—fasting specimen—free HCL—40 units, total HCL—50 units.

Gastroscopic examination on June 7, 1941:

The pyloric opening was seen contracting and relaxing normally. On the lesser curvature, in the pre-pyloric region, there was three superficial erosions, linear in shape, with exudate in their bases and radiating toward the pyloric opening. These lesions did not appear to be

malignant. The rest of the mucous membrane of the stomach showed evidence of advanced hypertrophic gastritis.

The patient was kept on an ulcer regimen and another gastroscopic examination was made on June 14, 1941. The superficial erosions originally seen through the gastroscope were not found at this examination (probably healed). The hypertrophic gastritis was considerably reduced.

In view of the clinical impression and X-ray findings, a laparotomy was performed. A small, hard, indurated area about $\frac{3}{4}$ cm. in diameter was found on the anterior wall in the pyloric end of the stomach and a similar palpable area on the posterior wall in the pyloric end of the stomach. The area on the anterior wall was grayish-white. This was suggestive of a benign pre-pyloric ulcer.

The pathological diagnosis was benign gastric ulcer.

COMMENT

The surgical as well as the pathological findings were consistent with the gastroscopic report. This is an interesting example where the gastroscope was the only instrumental method that revealed the true nature of the disease.

Case 6. J. T., female, age 52, Porto Rican, housewife, was admitted to the Cumberland Hospital on April 29, 1941, stating that for an indefinite period of time she had suffered from epigastric fullness and excessive belching after meals. In the last month she had suffered from anorexia and lost 20 lbs. Three weeks ago, she noticed black stools. For the past three days, she has had sharp epigastric pains and vomited mucus. On the day of admission, she vomited about "two glasses of bright red blood" and showed symptoms and signs of anemia. Alcoholism was admitted.

Findings on examination:

Tenderness was elicited in the epigastrium and in the left lower quadrant. Rectal examination was negative.

Clinical impressions:

1. Alcoholic gastritis.
2. Cirrhosis of the liver with oesophageal varices.
3. Bleeding peptic ulcer (probably arteriosclerotic).
4. Gastric malignancy.

Fluoroscopic examination of the gastro-intestinal tract on May 7, 1941, failed to show evidence of an ulcer of either the stomach or duodenum. Radiographic examination, however, revealed a penetrating ulcer on the lesser curvature, high up in the body of the stomach.

Another fluoroscopic and radiographic examination of the stomach and intestines done on May 14, 1941, was entirely negative.

Gastroscopic examination on May 17, 1941, revealed the mucous membrane in the body of the stomach to be hyperaemic. On the lesser curvature there was a small lesion, sharply outlined, about $\frac{1}{2}$ cm. in diameter with a greenish gray base. From the gastroscopic point of view, we were dealing with a definite benign ulcer.

Laboratory findings:

Analysis of the gastric contents revealed the fasting specimen—free HCL—0 units, total HCL—25 units. The specimen after histamine—free HCL—25 units, total HCL—40 units. The stool examination on May 8, 1941, was negative for occult blood.

COMMENT

In this case, the reports of the radiographic studies of the stomach and intestines on two separate occasions were contradictory. The gastroscopic examination clearly revealed a benign ulcer on the lesser curvature

in the body of the stomach. This was the only diagnostic procedure that reflected the true state of facts.

Case 7. E. M., age 58, male, single, white, undertaker, was admitted to the Cumberland Hospital on October 25, 1940. Two months ago the patient began to suffer from intermittent abdominal pains beginning around the umbilicus and radiating over the entire abdomen. This was accompanied by loss of weight and appetite. In the past three weeks, the pains became severe and constant, somewhat relieved by belching and flatus. The pains were worse at night and relieved moderately by the intake of milk. During this time, the patient vomited daily after meals. The vomitus was described as foul-smelling and contained some fragments which resembled "coffee grounds" but no gross blood. Milk and eggs were retained by the stomach. The patient also complained of moderate constipation and noticed black stools during the past week. Alcoholism was admitted.

Physical examination was practically negative.

The clinical impressions were:

1. Generalized arteriosclerosis.
2. Chronic alcoholism with alcoholic gastritis.
3. Possible carcinoma of the stomach.

Laboratory findings:

Gastric analysis of fasting specimen on November 1, 1940, free HCL—0 units, total HCL—5 units. The specimen after histamine—free HCL—35 units, total HCL—45 units. Blood was positive in all the specimens. Analysis of the gastric contents done on November 7, 1940, revealed no free HCL even after histamine was given.

Fluoroscopic and radiographic study of the gastro-intestinal tract done on October 30, 1940, was suggestive of carcinoma on the lesser curvature of the stomach in the pre-pyloric region with retention of a half of the barium meal on the 6 hour examination.

Gastroscopic examination on November 9, 1940, revealed a lesion in the pre-pyloric region on the lesser curvature, the size of a dime with a grayish green base. Its borders were at the same level as the rest of the mucous membrane, which was edematous and hyperaemic. The remainder of the stomach was normal. The gastroscopic impression was malignancy of the stomach in the operable zone.

The patient refused surgery. He was discharged from the hospital on November 12, 1940, condition improved. The patient continued to be symptom free while reporting to the clinic.

On February 8, 1941, the patient was gastroscopied again and the lesion described previously was seen, irregular in outline with a somewhat nodular base and grayish exudate.

A third gastroscopic examination October 11, 1941, revealed a lesion which was smaller than the one above described, the borders of which were sharply outlined. It was located in the pars media rather than in the pre-pyloric region. The question of an independent, old, benign ulcer had to be considered.

Radiographic studies of the gastro-intestinal tract on January 21, 1943, suggested malignant infiltration along the lesser curvature of the pre-pyloric region and evidence of an old, benign ulcer along the lesser curvature of the body of the stomach.

The patient was readmitted to the hospital on November 8, 1943. A month ago his gastro-intestinal symptoms became aggravated, resulting in loss of weight. He also complained of pains in the chest.

X-ray studies of the gastro-intestinal tract done on November 29, 1943, revealed the previously reported, penetrating ulcer in the pars media on the lesser curvature of the stomach still present. No mention was made

of the malignant infiltration of the pre-pyloric region.

An X-ray of the chest taken on November 21, 1943, showed metastatic lesions in both lungs.

The patient became mentally disoriented and was transferred to a state institution.

The report of the Creedmoor State Hospital was as follows:

X-ray of the chest on December 23, 1943, showed two circumscribed areas of consolidation, one in each lung. The one in the right lung had an area of decreased density in its upper portion, suggesting a cavity.

Radiographic examination of the gastro-intestinal tract on January 7, 1944, showed no defect in the stomach or intestines.

The provisional diagnosis was cancer of the lungs with encapsulated pus. The patient died January 29, 1944.

An autopsy was performed and the important finding was primary carcinoma of the lungs proven microscopically. The gastro-intestinal tract showed no evidence of gross pathological findings.

COMMENT

This is a striking instance where clinical and radiographic studies, as well as gastroscopic examinations failed to throw light on what this man was suffering from.

Case 8. C. O., age 41, white, male, laborer, was admitted to the Cumberland Hospital on July 4, 1940, complaining of "burning pains" across the abdomen, just below the epigastrium, for the past 14 days. The pains was accompanied by nausea without vomiting. They occurred one hour after meals and were promptly relieved by food, milk or bicarbonate of soda. His stools were tarry until two days before admission to the hospital. The appetite was good. For many years, he had suffered intermittent attacks of dyspepsia and pain after meals.

On physical examination the patient was markedly pale. Palpation of the abdomen disclosed tenderness at a point midway between the xiphoid and umbilicus. There was voluntary rigidity to the left of the epigastrium. The provisional diagnosis was bleeding peptic ulcer with secondary anemia.

Fluoroscopic and radiographic examination of the gastro-intestinal tract on July 11, 1940, was negative. Examination of the stools for occult blood was positive. This became negative at a later date. Gastric analysis—fasting specimen—free HCL—0 units, total HCL—15 units. Specimen after histamine—free HCL—15 units, total HCL—25 units. Blood studies showed evidence of secondary anemia.

Gastroscopic examination on July 20, 1940, revealed the angulus and pyloric opening somewhat eccentric. The mucous membrane in the pre-pyloric region was atrophic with mucus adherent to it. On the lesser curvature, toward the posterior wall, there were two shallow erosions surrounded by hyperaemic mucous membrane. No bleeding was noticed over these erosions. The gastroscopic impression was atrophic gastritis with superficial mucosal erosions.

COMMENT

This case illustrates that the diagnosis of gastritis with superficial mucosal erosions as well as simple gastritis can be made only by gastroscopy.

Case 9. C. N., age 43, white, male shipfitter, was admitted to the Cumberland Hospital on November 7, 1944.

For the past three years, the patient suffered from epigastric pains which radiated to the back and chest. The pains were more or less constant without any relation

to food and became progressively worse in the past few weeks. His appetite was poor and there was a weight loss of 20 lbs. The bowels moved daily with no evidence of bleeding. There was a history of vomiting occasionally after meals.

Physical examination revealed tenderness over the entire abdomen. The provisional diagnosis was gastric malignancy.

Laboratory findings:

Blood study showed evidence of secondary anemia. Analysis of the gastric contents revealed the fasting specimen—free HCL—0 units, total HCL—8 units. The specimen after histamine—free HCL—70 units, total 74 units. The stool examination was positive for occult blood.

Fluoroscopic and radiographic examination of the gastro-intestinal tract on November 14, 1944, revealed a penetrating ulcer on the lesser curvature in the pars media of the stomach. This was interpreted as a possible malignant ulcer. There was a 50% gastric residue on the 6 hour film.

Gastroscopic examination on November 18, 1944, disclosed a lesion on the lesser curvature in the body of the stomach, the size of a split pea, the borders sharply outlined and the base grayish in color. The mucosal folds were radiating toward the lesion. The gastroscopic impression was a penetrating, benign ulcer.

The patient was operated upon November 29, 1944. The findings were as follows:

A chronic, bleeding gastric ulcer along the lesser curvature of the stomach. This ulcer was penetrating and adherent to the pancreas.

The pathological report was chronic (peptic) ulcer of the stomach.

COMMENT

This case was diagnosed both clinically and roentgenologically as gastric malignancy. The gastroscopic impression of penetrating, benign ulcer of the stomach was consistent with the surgical findings and the pathological report.

Case 10. L. B., age 31, male, white, salesman, reported to my office on December 8, 1942, complaining of abdominal pains of three months duration. At first the patient interpreted these as hunger pains. Later on, the pains occurred daily; at 11 A. M., at 3 P. M., and awakened him at night. At times the pains were relieved by milk or food. His appetite was good. Pyrosis was present only when he had the pains. The bowels moved daily. There was no history of nausea or vomiting.

Physical examination revealed nothing abnormal except for tenderness in the epigastrium.

The clinical impression was peptic ulcer (duodenal) or possible gall-bladder pathology.

Prior to his visit to me, he had had a roentgenographic study of his gastro-intestinal tract which was reported as negative.

The stomach and duodenum were again X-rayed on January 15, 1943. The films showed a penetrating ulcer on the lesser curvature of the body of the stomach. The stool examination for occult blood, with the patient on a meat free diet for 72 hours, was positive.

Complete bed rest and ulcer regimen were instituted and on February 8, 1943, the stool was still positive for occult blood. Abdominal examination at that time revealed a tender mass in the epigastric region. As a result of these findings, the diagnosis of gastric malignancy was considered and the patient was admitted to the Brooklyn Jewish Hospital on February 15, 1943.

Gastroscopic examination on February 19, 1943, disclosed the following:

The angulus and pyloric opening were seen. The mucous membrane in that area was edematous, thickened and hyperaemic. In the antrum, extending to the body of the stomach, one could see a linear thickening, cord-like projection, nodular in appearance, with hemorrhagic areas in the same vicinity. The gastroscopic picture corresponded to one of the cases described by Schindler (7) and interpreted as lymphoblastoma of the stomach. A diagnosis of lymphoblastoma or lymphosarcoma was tentatively made.

A fluoroscopic and radiographic examination of the gastro-intestinal tract was made on February 18, 1943. The findings, reported at a later date, were suggestive of lymphosarcoma.

Laboratory findings:

Gastric analysis—free HCL—0 to 40 units, total HCL—18 to 65 units. All gastric specimens were positive for blood. Stools examined for occult blood on two occasions were positive. Red blood cell count and hemoglobin were indicative of secondary anemia.

The patient was operated upon on February 26, 1943, and a subtotal gastrectomy was done.

Pathological diagnosis: Resected stomach—lymphosarcoma.

The patient made an uneventful recovery and was discharged from the hospital March 20, 1943, for follow-up in the gastro-intestinal clinic. He was also referred for radiotherapy.

Radiographic study of the stomach and intestines on May 18, 1943, showed a gastrectomy with only the cardiac end of the stomach remaining. The barium poured readily through the ostium into the jejunum, the coils of which filled well. The progress of the meal at the six hours was normal.

The patient has been symptom free. His appetite has been good and he has been gaining weight.

COMMENT

The above reported case was extremely interesting from the clinical, roentgenological as well as from the gastroscopic point of view. The age, the rapid clinical developments, persistence of occult blood in the stools, the failure to respond to strict ulcer regimen, the rapid radiographic changes and the gastroscopic findings made the diagnosis of lymphosarcoma possible.

SUMMARY AND CONCLUSION

1. A reference to the indications, contra-indications and dangers of gastroscopy is presented.
2. Ten cases were selected from more than two hundred patients that were gastroscoped, some of them more than once.
3. Each of the cases reported, represented a clinical as well as roentgenological diagnostic problem.
4. All but two of the patients, No. 6 and 8, were either explored surgically or came to post-mortem examination.
5. In eight of the cases, the gastroscope proved to be of definite value in establishing the diagnosis. In two cases, the gastroscopic examinations failed in making the diagnosis and the clinical and radiographic examinations had likewise failed.
6. Many of the indications for gastroscopy are borne out by the cases reported.
7. It should be emphasized that gastroscopy is a valuable aid in diagnosing gastric lesions only in conjunction with a well taken history, physical examination, radiographic study and other laboratory data.

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Pruritus Ani: A Review of Oral Therapy

By

LAURENCE G. BODKIN, M. D.

BROOKLYN, N. Y.

IN THE original article on oral therapy for pruritus ani, (1), 42 cases were reported by the author and their progress described. Sodium dilantin, (diphenylhydantoin), employed originally in treatment of epilepsy, and taka-diastrase, gr. V; novatropin, gr. 1/24; phenobarbital, gr. 1/3 and sodium dilantin, gr. 1/3 was given four times per day, (one before each meal and one before retiring). All cleansing of the skin with soap and water was stopped; only olive oil or vaseline were used. Olive oil was employed to remove old vaseline. Bed clothes and underwear were laundered specially with mild soaps. Supplemental management included avoidance of alcohol, mineral oil, condiments and fried food. Occasional saline enemas were advised. In the office a twenty-five per cent silver nitrate solution was applied to fissures.

This routine, which represented the result of several years study of the problem, was applied to forty-two cases, most of whom responded satisfactorily in a short time. Since then, more cases have been added. It is now possible to review this method of treatment, with a follow-up on the earlier cases and observations on more recent ones.

The form of therapy used in this series has differed from others, in that it is oral and directed at the most likely site of origin of the condition, the nervous system, employing drugs which are used in the treatment of epilepsy. It contrasts definitely with local anal and perianal approaches heretofore employed with little, if any success.

The follow-up on the earlier cases brought out interesting and useful information. It showed that the medication must be used in considerable strength to bring about definite changes; must be continued for a long time; and that patients have to be guided and frequently observed until a good result has been obtained. It also showed that recurrences were not as common as had been originally predicted. There were some recurrences, however, and a few failures.

Many cases responded in a surprisingly short time. In rare instances some even cleared up in a few days or weeks. Even the average case showed some symptomatic relief within a few weeks. No particular change was noted in the skin at this time. Then came

a period of another few weeks, during which the patient made more gradual and steady progress. A definite change in color of the affected skin then took place. The redness gave way to a bluish tinge and this gradually paled until the eighth week, when it appeared normal in color. The skin fissures became shallow and disappeared as did the adjacent ridges, and sleeping was no longer a problem. Shortly after this the patient would report "no itch at any time."

Difficulties met with were many. It was not found possible to merely give the sufferer a capsule and thereby relieve him or her of the pruritus ani. It required the most careful supervision of details and constant encouragement to a few who would have given up treatment long before results were obtained. These people were all of a nervous type and some were difficult to manage. As soon as some relief was noted, however, they became most cooperative.

The first difficulty was in the management of the drugs. Taka-diastrase, aiding starch digestion which is often deranged in nervous indigestion, was found to be essential. A high B coli count in the stool, a consistent finding, suggested inability to digest carbohydrates. When this ferment was omitted, in three cases, and only dilantin sodium administered, no results were obtained. All three reported partial relief as soon as the taka-diastrase was added and they then continued onward to recovery. Novatropin seemed useful as an antispasmodic, though not essential. Phenobarbital was not required in all cases. It was helpful as a mild sedative and has usually been combined with dilantin in treatment of epilepsy.

Sodium dilantin (diphenylhydantoin) is the most important element in the formula. It is also the factor that has to be regulated most carefully as regards results and toxicity. The total daily dose employed here, and in epilepsy, is six grains. This is reduced if too much sedative effect is noted, a rather rare occurrence; it is a mistake to reduce it too promptly. Other toxic manifestations are dizziness, muscular incoordination, gastric disturbances, swelling and bleeding of the gums, excessive activity, or loss of weight. A rash appeared in three cases, although phenobarbital had not been included in the prescription.

Muscular incoordination appeared in one of the