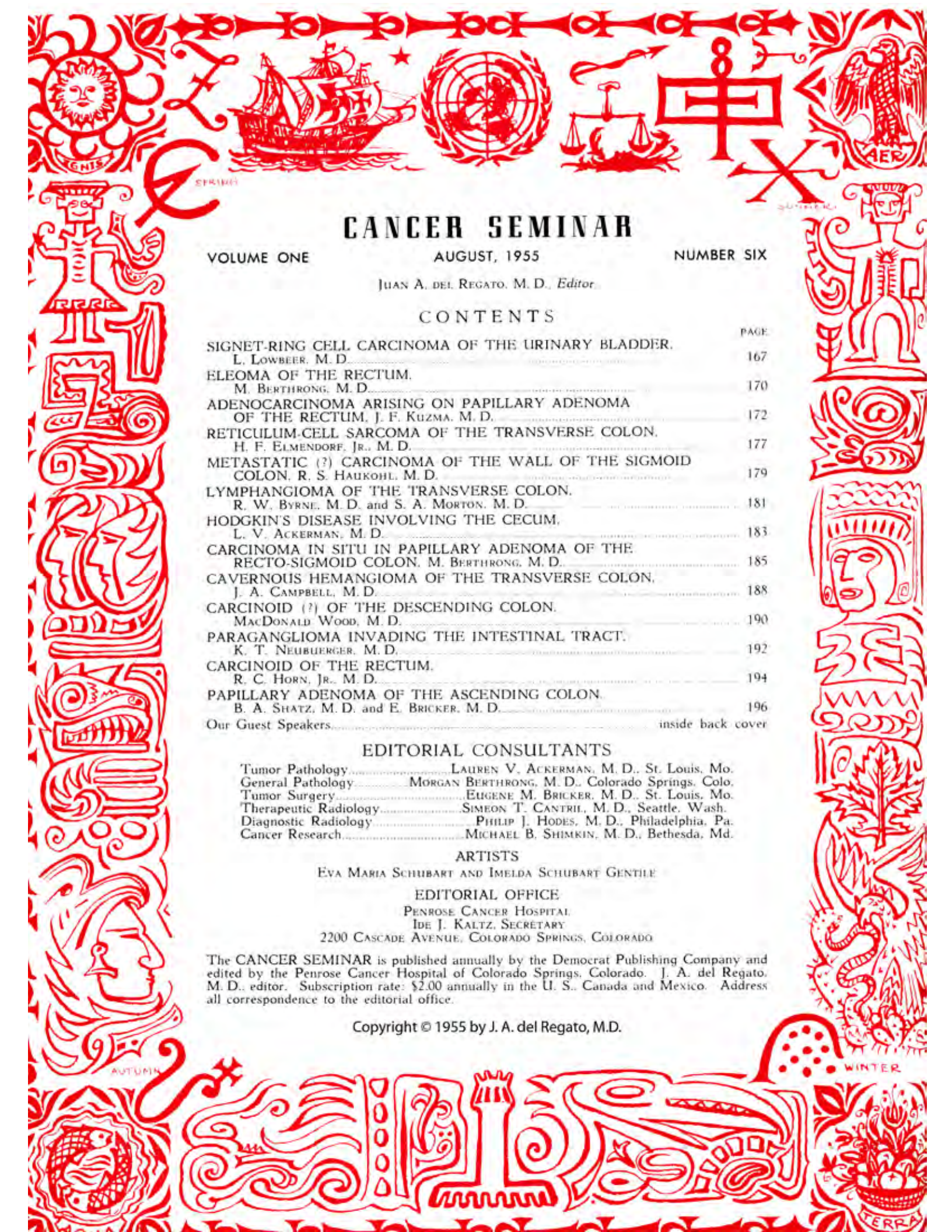


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Cancer Seminar





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JUAN A. DEL REGATO, M. D., *Editor*

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TUMORS OF THE LARGE BOWEL

CANCER of the large bowel is among the most frequent and also among the most curable of all forms of cancer affecting man. As it is the case of cancer arising in other organs, early diagnosis of cancer of the large bowel is the best step taken towards the eventual cure, but adequacy of treatment is also decisive. The occurrence of polyps in the large bowel and the knowledge that they are, not infrequently, precursors of cancer, provides an unusual warning and a possibility of prevention or of early treatment of cancer which should be well exploited on the patient's behalf.


Although a great proportion of the cases of cancer and polyps of the large bowel occur in the rectum and rectosigmoid, where they may be seen on proctosigmoidoscopy and easily biopsied, additional roentgenologic examination is always useful and often necessary to establish the actual extent of the tumor or the presence of other polyps or carcinomatous manifestations beyond the reach of the sigmoidoscope. In the diagnosis of tumors of the right, transverse and descending colon, the roentgenologic examination holds a place of paramount importance.

In the solution of the individual problems of the case at hand the radiologist must make good

use of the radioscopic observation, without which he may not be able to reach a diagnosis. He must also display discrimination and versatility in his choice of positions, opaque and suspension material and in the use of astringents, double contrast, simple evacuation films, supervoltage, etc. The most important ingredient leading to success is the radiologist's skill and judgment based not only on technical factors but in his knowledge of pathology and his clinical judgment.

The majority of cases of cancer of the large bowel offer no difficulty to the pathologist but his perspicacity in evaluating the malignant transformation of a polyp may prove all important to the patient; his thorough study of surgical specimens provide the most important information towards the establishment of a prognosis.

The CANCER SEMINAR naturally calls for the presentation of unusual cases which are not a true test of the procedures employed towards a diagnosis. Moreover the limitations of this educational exercise impose excessive handicap on the radiologist. The lessons of these SEMINARS



are often found in what our guest speakers and correspondents say in their way to make what may prove to be the wrong diagnosis, and our attendance and our readers have always appreciated their sportsmanship in submitting to the exercise for the sake of education. Thanks to them, this combined radiologic-pathological exercise, originated by the Penrose Cancer Hospital, has become established and adopted by others.

This CANCER SEMINAR on lesions of the large bowel was held on October 9, 1954, and was attended by 284 pathologists, radiologists, surgeons and internists. All those present benefited by the scholarly discussions of Dr. Ross Golden, Visiting Professor of Radiology, University of California Medical School at Los Angeles, and the fine judgment of Dr. Robert C. Horn, Jr., former Associate Professor of Surgical Pathology, University of Pennsylvania, who recently became the pathologist to the Ford Hospital of Detroit, Michigan. The discussions were enriched by the participation of our third

guest, Dr. Charles L. Eckert, Associate Professor of Surgery, Washington University Medical School, who brought forth the clinician's point of view.

This sixth issue of CANCER SEMINAR is dedicated to the participants in the Fifth Inter-American Congress of Radiology held in Washington, in April 1955, under the presidency of Dr. James T. Case. This issue completes the first volume of this publication; and on page 199 our readers will find follow-up information on previously published cases, a general index is provided on page 200. In order to keep the photographs and biographies of our guest speakers, bookbinders should be instructed not to discard front and back covers. We hope that our efforts to offer these discussions in printed form may prove as fruitful to others as the actual participation has been fruitful and enjoyable to us.

J. A. DEL REGATO, M. D.

Colorado Springs, August, 1955.





I. Signet-Ring Cell Carcinoma of the Urinary Bladder

Contributed by LEO LOWBEER, M. D., Tulsa, Oklahoma

THE PATIENT was a 49-year-old man in April 1953 when he complained of pain on urination and later of pollakiuria, constipation, tenesmus and the passage of ribbon-like stools. On proctoscopy an anular constriction was found 6 cm above the sphincter and on cystoscopy there was bullous edema and diminished bladder capacity.

Dr. Golden: A single pre-evacuation film following a barium enema discloses an irregular constriction 7-8 cm in length in the rectum, an abnormal contour of the same character but with less narrowing in the proximal third of the transverse colon, a defect on the medial margin of the cecum, about 1.5 cm in length which suggests a sessile polypoid mass, a questionable slight narrowing in the middle third of the sigmoid and possibly a similar one in the middle third of the transverse colon.

The two major lesions suggest inflammatory disease, but lymphosarcoma could conceivably produce multiple areas of involvement, although I have never seen this happen in the large intestine. The more common inflammatory diseases involving the rectum are amebiasis, tuberculosis and lymphogranuloma inguinale. The first two frequently pro-

duce multiple lesions in the colon. The site of predilection in amebiasis is the cecum, which appears to be normal except for a small polypoid mass on the wall which cannot be attributed to amebiasis. The polypoid mass could be merely a sessile polyp not related to the major lesions. The other two slight questionable constrictions are similar to those which tuberculosis can produce. The sharp little barium projections along the margin of the rectum and the lesion of the proximal transverse colon suggest tiny cone-like mucosal ulcers or fissures in the mucosa, probably extending into the submucosa. These are seen in amebiasis but as far as I know do not occur in other conditions. However, they might be the necks of diverticula in diverticulitis which this obviously is not.

Dr. Golden's impression: AMEBIASIS, suspected.

Roentgenologic Impressions Submitted by Mail

Lymphopatia venereum	45
Carcinoma of rectum	41
Extrinsic carcinoma	16
Carcinoma of bladder	6
Carcinoma of prostate	5
Others	15

Fig. 1 — Roentgenogram showing area of constriction in the recto-sigmoid colon.

Fig. 2 — Gross specimen showing thickening of the entire bladder wall; the thickening of the rectal wall is noted only in the anterior wall.



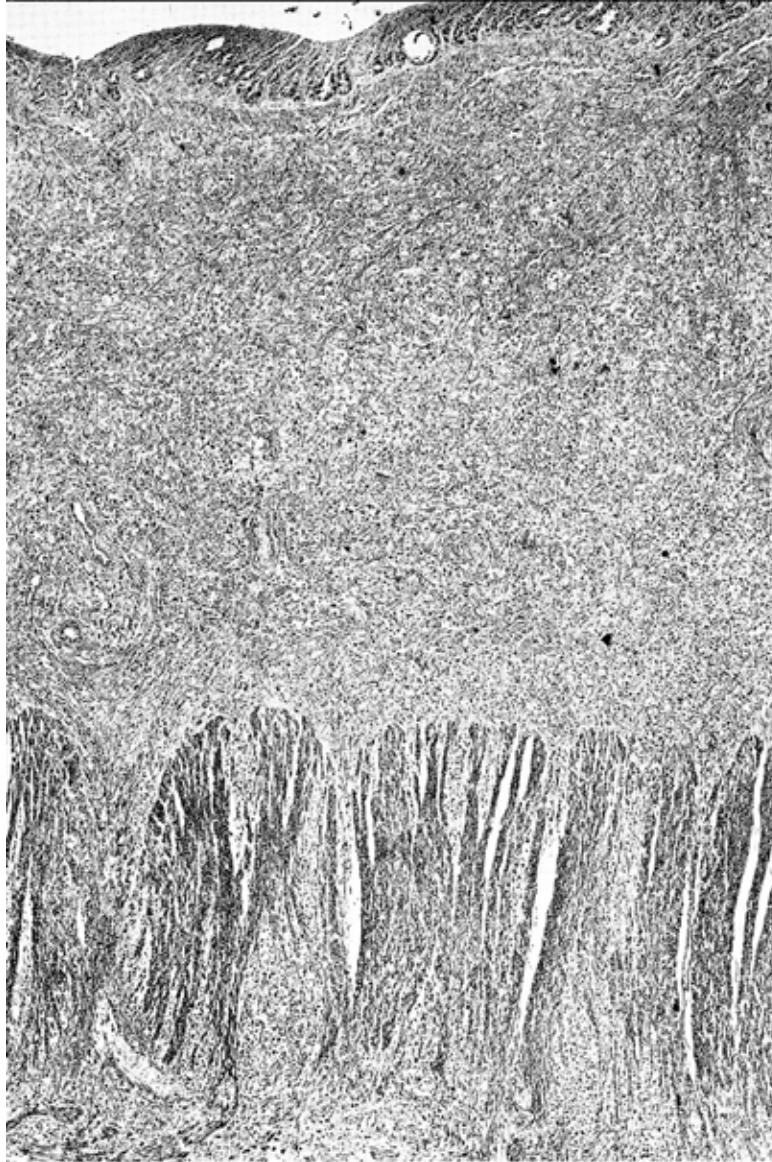


Fig. 3 — Low power photomicrograph showing thickening of rectal wall, especially of the sub-mucosa, and intact mucous membrane.

Dr. Regato: Dr. Jorge Ceballos of Galveston, Texas, and Dr. Philip J. Hodes of Philadelphia, Pennsylvania, suggested lymphopathia venereum. Dr. Paul Swenson of Philadelphia also noted the possibility of an additional lesion near the hepatic flexure and concluded to a probable inflammatory lesion. Dr. Wendell Stampfli of Denver suggested a malignant tumor arising outside the bowel. Dr. Galen Tice of Kansas City made a diagnosis of primary bladder tumor.

Dr. Horn: The bowel wall is greatly thickened by tumor which diffusely infiltrates the submucosa and perirectal tissues and involves the muscle coat to a lesser degree. The mucous membrane is intact and essentially uninvolved. The tumor is composed of large cells growing independently in an abundant fibrous stroma. Many of the cells are characterized by vacuoles containing mucicarminophilic material. There is no discernible pattern of growth.

This is certainly a malignant epithelial tumor although not the usual rectal or colonic carcinoma. The lack of mucosal involvement makes one consider the possibility that this is metastatic. However, tumors of this configuration, closely resembling the better known linitis plastica type of gastric carcinoma, occasionally arise in the large bowel. Like those in the stomach, these carcinomas in the rectum are usually extensive when encountered by the surgeon, as this one is. The free invasion of the tumor is not limited to the viscus of origin.

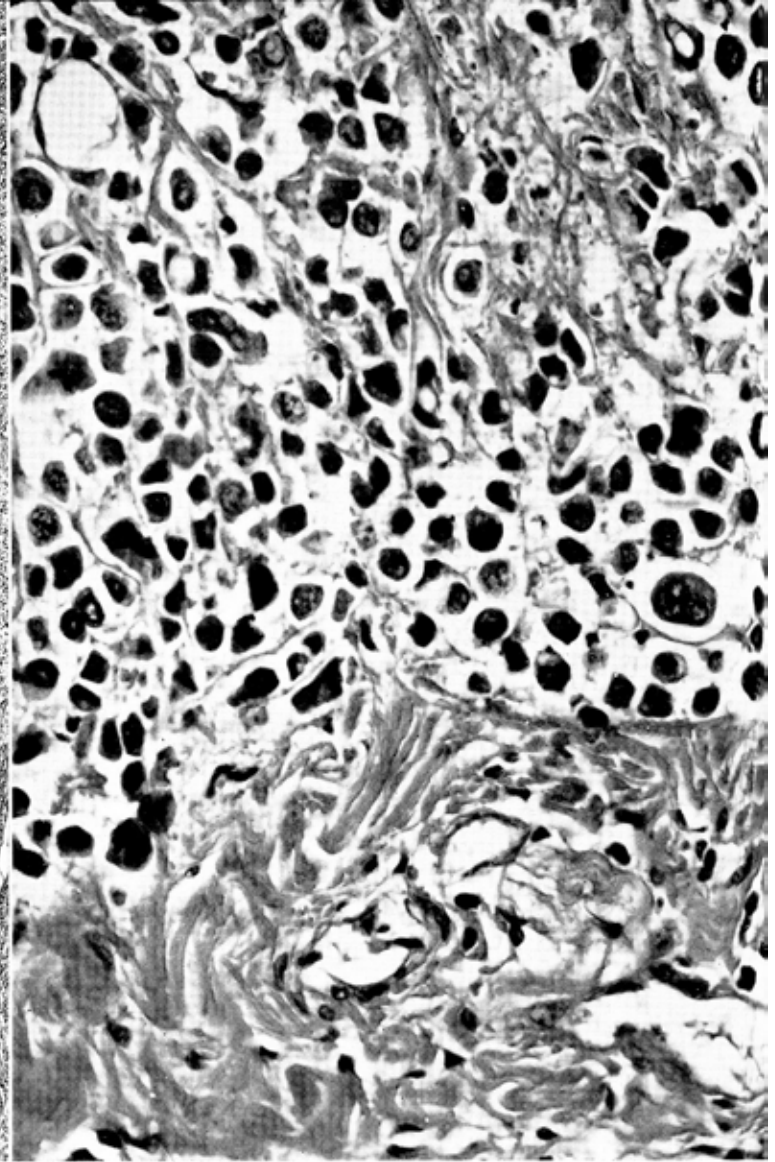


Fig. 4—High power photomicrograph showing detail of tumor cells; note signet-ring forms.

Dr. Horn's diagnosis: COLLOID CARCINOMA (linitis plastica type).

Histopathologic Diagnoses Submitted by Mail

Adenocarcinoma	52
Mucinous carcinoma	27
Carcinoma of the stomach	23
Carcinoma (linitis plastica type)	16
Carcinoma (signet ring type)	15
Carcinoma of bladder	9
Carcinoma of prostate	5

Dr. Regato: Dr. Rupert Willis of Leeds, England, made a diagnosis of carcinoma possibly arising in the stomach. Dr. Pierre Masson, of Montreal, wrote that the probable gastric or intestinal origin could not be discerned from the slide.

Arthur P. Stout, M.D., New York, N. Y. (by mail): Signet-ring cell carcinoma containing mucin and with marked desmoplastic propensities. The tumor may be primary at this site or it may have originated in the stomach or elsewhere.

L. V. Ackerman, M.D., St. Louis, Missouri (by mail): Tumor profusely involving the wall of the large bowel; the tumor cells are single and often signet-ring in type. This may be a primary carcinoma of the large bowel in which the mucosal involvement is not apparent in this slide. We cannot rule out the possibility of secondary involvement from a carcinoma arising elsewhere.

Subsequent history: The patient was given "palliative" roentgentherapy and was discharged. In July 1953 he was readmitted, he vomited frequently and had lost 30 pounds of weight in two months. In August 1953 he expired.

Leo Lowbeer, M. D., Tulsa, Oklahoma: The essential gross autopsy findings were (1) extreme thickening of the entire bladder wall with stenosis of both ureters and bilateral hydroureter and hydronephrosis, (2) induration and thickening of the anterior rectal wall and adjoining sigmoid, (3) diffuse induration of the peritoneum, mesentery and muscles of pelvis, and (4) no lymph node or visceral metastases. The essential microscopic findings were: (1) conversion of the entire bladder mucosa into a cellular, undifferentiated malignant neoplasm, whose large epithelial cells contained mucin and presented signet-ring appearance. Occasional gland-like structures as well as Brunn-Limbeck epithelial cell-nests were found at the surface; in other areas typical foci of squamous cell carcinoma were evident (2) the infiltration of the entire bladder wall was associated by marked fibrosis and chronic inflammation. The infiltration by signet-ring tumor cells was also present on the serosa, muscularis and submucosa, but *nowhere* on the muscularis mucosa nor on the mucosa of the recto-sigmoid; (3) there was direct infiltration of muscles and scrotum but no lymph node or visceral metastasis.

In chronic inflammation of the bladder, downgrowth of transitional epithelium takes place in the form of Brunn-Limbeck cell-nests; within these cell-nests regressive columnar-cell metaplasia occurs with mucin production and the formation of cysts and glands; cystitis cystica and cystitis glandularis. This then is the process of dedifferentiation of transitional epithelium to mucin producing columnar epithelium of which the bladder is capable due to its derivation from the hindgut. We have observed a case of extensive transformation of transitional epithelium of the bladder into

mucin producing glandular epithelium, years after bilateral ureteral transplantation. Obviously such epithelium could give rise to adenocarcinoma that should not be confused with those arising from urachal cell rests (Wheeler).

Signet-ring cells have been observed to occur in the stomach, colon, gallbladder and breast (Saphir). There is no reason why they should not originate in the bladder. Otto Saphir has recently published two such cases; we consider this to be the third.

John Goforth, M. D., Dallas, Texas: I was one of the pathologists who classified this tumor as being probably of gastric origin and generalizing from that focus. I would like to ask Dr. Lowbeer what the stomach showed at post-mortem.

Leo Lowbeer, M. D., Tulsa, Oklahoma: The stomach was entirely negative.

Dr. Horn: After having had the opportunity of the presentation of complete autopsy findings by Dr. Lowbeer and having studied the microscopic slides thoroughly, there seems to be no doubt that this is a most unusual tumor, unique in our experience, a signet cell carcinoma primary in the urinary bladder.

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2. Eleoma of the Rectum

Contributed by MORGAN BERTHONG, M. D., Colorado Springs, Colorado

THE PATIENT was an 82-year-old man who in January 1954 was brought to the hospital in acute urinary retention. He gave a history of pollakiuria and nycturia, of progressive constipation, diminution in the caliber of stools and loss of 50 lbs. in weight in 10 months. He had received injection treatment for hemorrhoids one year previously. Proctoscopy revealed a polypoid mass on the lateral and posterior walls of the rectum; the prostate was enlarged and indurated. The roentgenograms showed a filling defect in the rectal ampulla. Acid phosphatase: 5.4 K-A units.

Dr. Golden: A single film of the lower left two-thirds of the abdomen following a barium enema discloses a constriction in the proximal part of the rectum, the left margin of which is quite irregular but the right side is smooth. Just below the constriction on the left side, a barium projection is present which is consistent with a wide ulcer opening into an excavation in the perirectal tissues, ending in fistulas.

Fig. 1—Roentgenogram showing filling defect of the rectal ampulla.

The patient presumably has a carcinoma of the prostate. I do not believe that this mass is an invasion of the rectum by the carcinoma of the prostate. The proctoscopy revealed a "polypoid mass" on the lateral and posterior wall of the rectum, presumably the left lateral wall. This mass has perforated and doubtless has formed a perirectal abscess, the soft tissue shadow of which can be seen. This could be the result of either a carcinoma or of a lymphosarcoma of the rectum. If the mass is hard, it is probably a carcinoma. If it is not hard, it is probably a lymphosarcoma. The former is much more common than the latter, and on the basis of probability this must be interpreted as a carcinoma which has not extended all the way around the rectal wall.

Dr. Golden's impression: (1) MALIGNANT TUMOR of the rectum. (2) ABSCESS and FISTULAS of unknown etiology.

Fig. 2—Gross specimen of the same case.



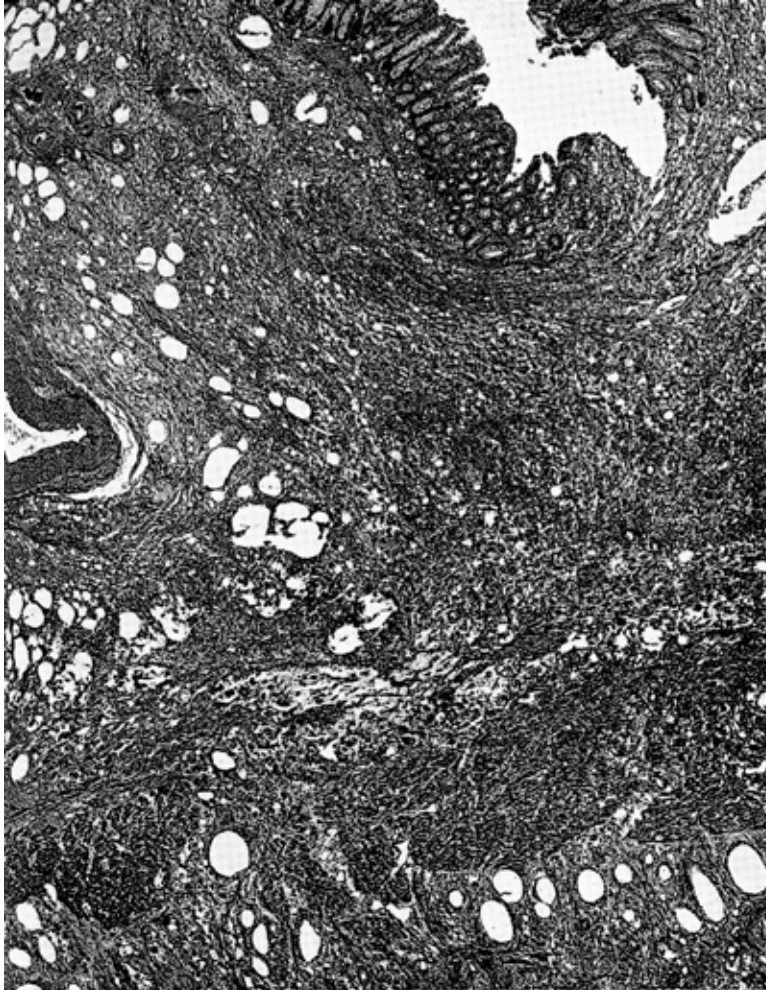


Fig. 3—Low power photomicrograph revealing granulomatous thickening of the rectal wall.

Roentgenologic Impressions Submitted by Mail

Carcinoma of prostate.....	56
Carcinoma of rectum.....	41
Carcinoma of bladder.....	8
Perirectal abscess.....	7
Others.....	7

Dr. Regato: Dr. L. Pascucci of Tulsa suggested a primary bladder tumor with recto-vesical fistula.

P. J. Hodes, M.D., Philadelphia, Pennsylvania (by mail): A most bizarre appearance with the rectum secondarily involved by a soft tissue mass in the pelvis. This second soft tissue mass apparently has also found its way into the rectum through a separate tract. I suspect a congenital anomaly which has undergone malignant transformation.

P. C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): There is an obstructing lesion (gas in the small bowel) and secondary involvement of the small bowel. This is cancer unless proven otherwise.

Operative findings: On January 28, 1954, an abdomino-perineal proctosigmoidectomy was carried out. A constricting mass was found in the rectal area densely adherent to pelvic walls; a polyp was present just above this area. No gross evidence of metastases was found.

Dr. Horn: There is an area of deep ulceration with an acute inflammatory reaction but except for this the lesion appears to be one involving the deeper coats of the rectum, the submucosa, muscle and perirectal tissues. Irregular cyst-like spaces of varying size are scattered through these coats. In some, no lining other than fibrous tissue can be seen, but

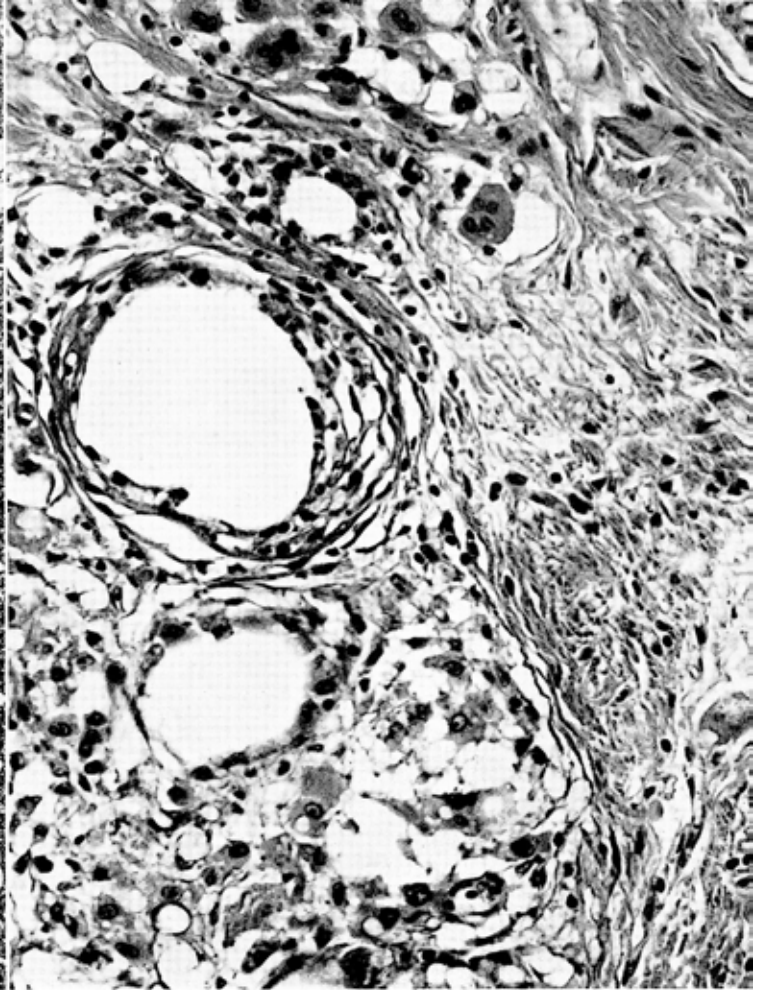


Fig. 4—Moderate power photomicrograph showing phagocytes, foreign body giant cells and rounded spaces which, before processing, contained oil.

others are lined by phagocytes. In addition, phagocytes as well as multinucleated giant cells, are numerous throughout and are sometimes grouped in tubercle-like clusters. Both the mononuclear phagocytes and the giant cells frequently have vacuolated cytoplasm. This has all the features of a foreign body reaction to some lipoid material.

I was very pleased with myself when, some years ago, I recognized a small submucosal rectal nodule like this and ascribed it to injection treatment of hemorrhoids. Shortly thereafter I discovered that these are not uncommon lesions (the most common submucous nodule encountered in the colon in some parts of the country) and that they may vary from tiny, insignificant nodules to large masses that may progress over a period of time and may even encircle the rectum and produce obstruction. They have been shown to be due to mineral oil used as the vehicle for phenol in the injection treatment of hemorrhoids.

Dr. Horn's diagnosis: ELEOMA, of the rectum.

Histopathologic Diagnoses Submitted by Mail

Inflammation, fat necrosis.....	46
Lipogranuloma.....	33
Oil granuloma.....	25
Foreign body reaction.....	18
Eleoma.....	14
Too many oil enemas.....	1
Others.....	21

Dr. Regato: Dr. M. B. Dockerty of Rochester, Minnesota, Dr. L. V. Ackerman of St. Louis, Missouri, and Dr. J. F. Fennessey of Fort Carson, Colorado, identified this lesion as a granuloma due to oil injection treatment for hemorrhoids.

M. Berthrong, M.D., Colorado Springs, Colorado: We recognize this as an injection granuloma. I think it would be very difficult to say from the histological picture that it was indeed oil, because any substance or material that would break down fat might also result in such a picture. In other words in the vicinity of a pancreatitis with a breakdown of fat we might find such foreign body reactions to large fatty droplets. I might say that the material was positive but of course mineral oil and other oils used for the urea compounds which are used for injection will also produce the same thing. We were surprised that the lesion was located $7\frac{1}{2}$ cm above the mucocutaneous junction which seemed to me to be a little bit high to be due to injecting. As Dr. Horn noted the mucosal surface was intact. There was a small ulceration which extended into the perirectal abscess which was noted in the roentgenogram. The patient suffered an unfortunate coincidence of lesions in that the initial biopsy was of the small polyp which was also present and which showed a marked epithelial hyperplasia.

Dr. Eckert: We do not treat hemorrhoids by injection therapy but we have seen seven cases of this type of granuloma in our hospital. The majority of these have been close to the anal canal. One was sufficiently small to do a local excision of with relatively prompt healing. The remainder have been treated conservatively. Some of them have shown marked evidence of progressive ulceration and extension, however. We have two cases in which there is no history whatsoever of injection therapy the origin of which is completely unknown.

Dr. Golden: One of the puzzling things about this is the anular narrowing of the lumen to the upper part of the rectum. Presumably we must interpret that as a spasm or reaction of the muscle to the adjacent infection. Would that be the correct interpretation Dr. Eckert?

Dr. Eckert: I think undoubtedly there is sufficient inflammation to produce that constriction in that area.

L. Lowbeer, M.D., Tulsa, Oklahoma: In the neighboring states of Texas and Oklahoma it was once the practice of some surgeons to lubricate the intestine with vaseline in order to prevent adhesions. We have some such cases in which an oil granuloma of the peritoneum developed as a consequence.


F. Adams, M.D., Pueblo, Colorado: Eleomas of the rectum are not frequent consequences of the injection treatment of hemorrhoids. We have been using injection treatment for many years and many of our cases have subsequently gone to hemorrhoidectomy; all but one have passed the pathologists without comment; the one exception had been injected only two weeks before. I believe that whenever an eleoma is encountered it is due to the now old fashioned mineral oil in the injection.

M. Berthrong, M.D., Colorado Springs, Colorado: There has been some experimental work regarding these oils. A number of oils which are used as vehicles are not reactive in the fashion that mineral oil is. Olive oil for instance has been injected in humans, monkeys and many other animals to attempt to reproduce the lesions without success. Apparently that oil is rapidly absorbed. Peanut oil, on the other hand, which has also been used, will produce a reaction though not as much as mineral oil. This patient apparently had been injected many times and while the mass was most apparent on one half, the entire circumference of the rectum did have this granuloma in the wall.

Subsequent history: Ten days after operation the patient had abundant bleeding through his colostomy and expired. Autopsy revealed that bleeding was due to a duodenal ulcer, 3 cm in diameter. No evidence of tumor was found anywhere.

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3. Adenocarcinoma Arising on Papillary Adenoma of the Rectum

Contributed by JOSEPH F. KUZMA, M.D., Milwaukee, Wisconsin

THE PATIENT was a 43-year-old man in 1932 when he first complained of painful defecation and blood in the stools of two years' duration. Proctoscopy revealed multiple polyps; these and numerous others which appeared before 1940 were fulgurated. He was not seen from 1941 to 1947; in 1948 he was seen again complaining of rectal bleeding and barium enema showed numerous polypoid defects.

Dr. Golden: One film is presented showing the colon well filled with air after the evacuation of a barium enema. The mucosa is well outlined by the opaque material. The rectum is not shown. The shadows of numerous polyps and so-called "pseudo-polyps" can be seen. In the proximal third of the transverse colon is a narrowing of the air

column, probably 2-3 cm in length. Because of the contour of the inferior margin, I doubt that this is due solely to localized spasm. This contour suggests a mass which could well be a fungating carcinoma arising on the basis of a polyp. This was doubtless clearly shown when the colon was filled with barium. An intraluminal mass can be seen in the splenic flexure and proximal descending colon, which is probably fecal matter, similar to the shadows seen on the distal descending colon. Of course any polyp may show carcinoma on histologic examination.

Dr. Golden's impression: (1) CARCINOMA of proximal third of transverse colon and MULTIPLE POLYPOSIS.



Fig. 1—Contrast roentgenogram showing numerous polypoid defects.

Roentgenologic Impressions Submitted by Mail

Polyposis	53
Polyposis and carcinoma	41
Carcinoma of colon	24
Factitious polyps	3
Others	2

Dr. Regato: M. Harris, M. D., Spokane, Washington, also suggested a carcinoma of the transverse colon with multiple polyposis. N. Glazer, M. D., of Cleveland, Ohio, suggested factitious polyps.

P. J. Hodes, M. D., Philadelphia, Pennsylvania (by mail): Multiple polypoid defects which have an odor. A large mass encroaching upon the sigmoid, probably a carcinoma.

P. C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): Multiple polyps, one or more of which have "gone wild."

Subsequent history: In 1950 a large pedunculated bleeding polyp was fulgurated and six others removed; microscopic examination showed cancerous changes. In December 1950 he had a colostomy.

Dr. Horn: Naked eye examinations of the section shows the mucous membrane to be thrown into complex papillary folds. For the most part the glands are fairly regular and made up of orderly, uniform cells with basal nuclei. In one area, however, the picture is that of carcinoma—the glands are more irregular, pleomorphism is more marked, basal nuclear polarity is not maintained, and the pattern is that of cord of cells enclosing multiple lumina. The growth is apparently invasive, although I cannot be sure that the muscularis mucosae has been penetrated. This lesion, then, is a carcinoma, apparently arising in a papillary adenoma.



Fig. 2—Low power photomicrograph of papillary adenoma with complex branching pattern and carcinoma arising within it.

The papillary adenomas are relatively uncommon tumors which should be distinguished from adenomatous polyps because of the frequency with which cancer ultimately develops. The papilloma is considered to be a tumor of the surface epithelium, the adenoma one of the glands. The distinction can be a very difficult one on biopsy where one sees only fragments and cannot observe the whole lesion.

Sunderland and Binkley demonstrated *in situ* carcinoma in 26 of the 48 cases they studied and in an additional seven cases there was *in situ* carcinoma in locally recurrent tumors. Nineteen of these 33 subsequently developed invasive carcinoma whereas none of the cases without atypical features did so.

Dr. Horn's diagnosis: ADENOCARCINOMA OF RECTUM arising in papillary adenoma.

Histopathologic Diagnoses Submitted by Mail

Carcinoma in polyp	85
Adenocarcinoma	42
Benign polyp	14
Carcinoma grade 0.45	1
Others	2

Dr. Regato: J. B. McNaught, M. D., of Denver, Colorado, C. A. Hellwig, of Halstead, Kansas, and M. Polak of Buenos Aires, made a diagnosis of polyp with malignant transformation. C. Oberling, M. D., of Paris, felt that there was a definite tendency to malignant transformation but no definite sign of carcinoma.

M. B. Dockerty, M. D., Rochester, Minnesota (by mail): This polypoid lesion exhibits all stages of hyperplasia from benign adenoma to high grade adenocarcinoma.

L. V. Ackerman, M.D., St. Louis, Missouri (by mail): I believe this is no longer a benign polyp, there is actually carcinoma present. This is shown by the interglandular budding, the pattern, and some of the nuclear changes. It is true that the tumor is relatively superficial.

A. P. Stout, M.D., New York (by mail): This seems to be not only multiple adenomatous polyps but carcinoma in situ involving the polyps and actually replacing the mucosa. I cannot find any evidence of invasion. This man is seriously threatened with invasive cancer.

Dr. Eckert: In cases of polyposis of the colon, surgical indications are clear cut and straightforward, for all portions of the mucosa are predestined to the development of polypoid lesions and eventually malignant tumors if they are given sufficient time. Therefore the surgeon is obliged to remove the entire colon and, in the majority of cases, the rectum as well with the performance of permanent ileostomy or so-called anal ileostomy. In the case without family history of polyposis, with multiple polypoid lesions in the colon and with only rare polyps in the rectum which can be removed by conservative measures, one can consider a colectomy with primary anastomosis of the ileum to the upper rectum; the lower this anastomosis is performed the better. In every series reported in which conservative procedures have been done a certain incidence of malignant tumor formation in the residual rectal segment has been reported. I have had occasion to operate on a boy 13 years of age with multiple polyposis which had already become frankly malignant.

The problem of the single polyp is quite different, there we need persistence on the part of the surgeon and cooperation on the part of the pathologist and usually their getting together. In the majority of sessile polyps, if enough biopsies are taken, the true knowledge of their nature can be obtained; if definite infiltrative changes are seen I think they should be treated as cancer. If infiltrative changes are not seen then they are suitable for local removal and the size of the polyp and the exact location will determine the approach that is used. As far as the pedunculated polyps, those polyps that have a definite stalk in which there are only malignant changes in the tip, we have never had example of metastases from such a lesion and we remove them conservatively with a good margin of the stalk.

M. Berthrong, M.D., Colorado Springs, Colorado: I have recently seen a polyp with malignant change just at the tip but with invasion of the submucosa and with metastases to the regional lymph nodes. It was a unique case but makes one worry about the next one. There was a definite long stalk, about 3 cm. It looked like a benign polyp but there was invasion and metastases in the regional lymph nodes.

Dr. Eckert: There have been other reports of this sort. Claude Welch from the Massachusetts General Hospital published a report on adenomatous polyps that the surgeon encountered, and he described what seemed to be three such lesions. We asked him to bring the material with him so that we could see it and we were able to talk him out of his concept: they turned out to be three very early, minute invasive carcinomas.

Dr. Golden: Just for the record I would like to point out that the detection of these polyps in the colon is one of the most difficult things the radiologist has to do. It involves very careful cleaning out of the colon with castor oil, with enemas, and even that isn't enough at times. We have begun to put the patient on a low residue diet for two or three days before the examination. But it can be extremely difficult because polyps do not all have the same physical texture. Some of them are firm and stand out from the wall; some of them are very soft and lie down flat against the wall; some of them do not have much more texture than a

blob of mucus and those are the kind that are very difficult to detect. Once I did three double contrast enemas on a patient before I was satisfied that she did have a polyp of the descending colon.

A. F. Rossitto, M.D., Wichita, Kansas: How does Dr. Golden handle this problem of polypi when the patient is first presented? They ask us to look for polypi and it is quite a chore: we see very few polyps.

Dr. Golden: My impression is that we fail to see more than we do see. It may be that the incidence is different in different parts of the country. I have come to believe that Dr. Cesare Gianturco is right in advocating the usage of high voltage radiology. He has given up using the double contrast method. I think we ought to use all of the methods at our command and that in the presence of bleeding we should assume that a polyp is there until we have failed to show it at least twice. And if we find a shadow that looks like a polyp, the examination should be repeated to see if the same shadow can be reproduced in the same place. In spite of all our efforts sometimes a piece of fecal matter may be very confusing.

B. Eiseman, M.D., Denver, Colorado: We appreciate it greatly when the roentgenologist can demonstrate a polyp for us. However, not infrequently, despite their best efforts, they cannot demonstrate a lesion in a patient who is bleeding. The question always arises in my mind—is it worthwhile to have 2, 3, and 4 contrast barium enemas and the expense and time involved? Frequently we have to make up our minds to explore that patient whether the roentgenologist sees it or not. It is not pleasant to have to operate to find those polyps, but that frequently occurs.

Dr. Golden: I have known bleeding to occur with no cause to be found and the patients lived without further trouble for many years. Another thing is that bleeding can come from the small intestine as well as the large, so that after two negative double contrast procedures, and if the patient bled again, I would certainly do a very careful small intestine study.

H. K. Giffen, M.D., Omaha, Nebraska: I would like to ask Dr. Horn if he has any impression as to the etiology of papillomas as opposed to adenomatous polypi and whether either has a common cause by viruses or anything else.

Dr. Horn: I do not know any more about that than you do Dr. Giffen. In a number of instances of papillomas or papillary adenomas of the rectum, associated polyps have been found. In cases of multiple polyposis both lesions may occur, although the papillary adenoma is a great deal less common.

H. W. Hejke, M.D., Milwaukee, Wisconsin: I don't see how a surgeon can find these small polyps, certainly not by palpation. At times he has to make an opening and put in the sigmoidoscope at surgery and he can see only a limited area. Often more than two examinations are necessary. I remember many cases where repeated bleeding was present and as many as six sigmoidoscopies and six or more barium enemas were necessary to find the lesion; I think that is better than to operate and probably not find anything. As far as contrast enema is concerned we probably use it only for sure purposes mostly and in multiple polyps it looks very nice. Some 75% of polyps are seen by the proctoscopist and there is no need for additional demonstration. And so the contrast enema is done only in order to either confirm or see the extent of multiple polyposis. I would like to ask Dr. Eckert—do you think that when there is a multiple polyposis demonstrated surgery should be done early? There was a family in Milwaukee in which in the course of the last 30 years, 50 members had been operated on and they all pretty nearly died except the ones who were operated in adulthood.



Fig. 3—High power photomicrograph revealing orderly pattern of well differentiated cells which characterizes most of the lesion.

Dr. Eckert: I think every patient with multiple polypoidosis should be operated on when the diagnosis is made, delays are not warranted with one possible exception: very early in childhood when the risks of malignant changes are small. There is great difference in the occurrence of massive hemorrhage or chronic blood loss. Polyps of the colon seldom produce massive hemorrhage. I wouldn't say they never produce it, but seldom produce it. They will produce chronic blood loss in the majority of cases and under those circumstances one has an opportunity to do repeated examinations and study the entire gastrointestinal tract. However, in the case of acute hemorrhage there are certain indications to operate in the absence of definite demonstrable lesions by radiologists or on sigmoidoscopy. And in those unfortunate cases we are doubly handicapped also for the bowel may not be adequately prepared when we operate on the patient and the procedure of introduction of the sigmoidoscope into various segments where the entire bowel can be visualized, is not feasible.

J. Ceballos, M.D., Galveston, Texas: I would like to ask Dr. Golden if he thinks the use of tannic acid improves the diagnosis of polyps?

Dr. Golden: We used tannic acid for a while but gave it up because we did not think that it helped us much. Given one of these small flaccid polyps, a tight circular muscle may squeeze it in such a way that its contours cannot be differentiated from those of the mucous membrane itself. Thorough cleaning out, high voltage radiology with the colon filled, pre and post-evacuation films and then double contrast procedure are the methods of choice.

N. E. Pond, M.D., Milwaukee, Wisconsin: I would like to have Dr. Horn comment on the frequency with which

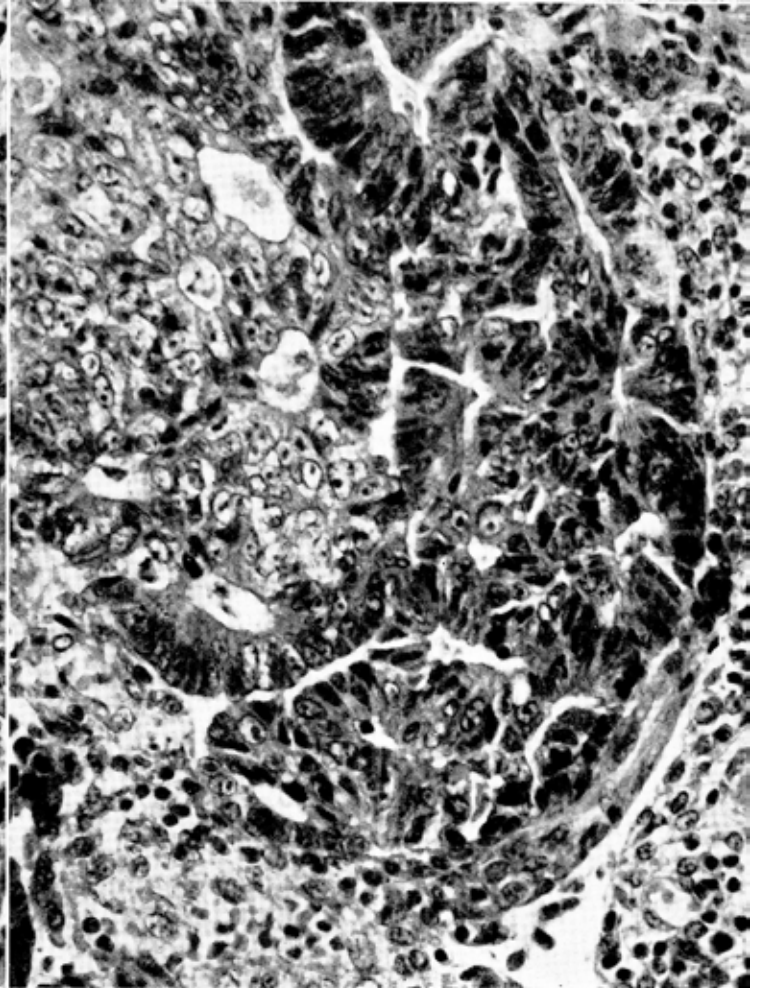


Fig. 4—High power photomicrograph showing carcinoma: loss of differentiation and invasive growth.

he has seen unsuspected polyps of the colon or stomach at autopsy.

Dr. Horn: I think Elson Helwig reported 7% polyps in the large bowel in a series of unselected autopsies in the older age group. It would be my impression that our incidence of unsuspected polyps at autopsy is lower than that, appreciably so, and is almost nil in the stomach.

H. F. Elmendorf, Jr., M.D., San Antonio, Texas: In the patient with multiple small or moderate hemorrhages over a long period of time, where there is bright blood appearing in the stool, what is the highest point at which you suspect the location of the point of bleeding?

Dr. Golden: Usually they are in the distal half of the large intestine. Where the blood is dark, however, the lesion can be anywhere from the stomach on down.

W. Whitehouse, M.D., Ann Arbor, Michigan: I would like to ask Dr. Golden about the relative importance of the different barium preparations, the various sizes particles and usage of suspension agents. We are caught in the cross-fire of advertising claims and aren't always able to investigate thoroughly.

Dr. Golden: It has been our impression that the non-flocculating barium preparations, so-called, are very much better than plain barium water preparations. In the majority of cases it will cover the mucous membrane very nicely as it was covered in the case here, whereas barium in water will begin to flocculate immediately and form small snowflake like masses which do not outline the mucous membrane satisfactorily. I would hesitate to do the double contrast procedure now without using one of the good non-flocculating suspensions.

C. F. Ingersoll, M.D., Denver, Colorado: I think we radiologists have been extremely lax in trying to explore new methods of different contrast materials. We have stuck to this old substance, the barium sulphate; we haven't tried new methods. Some work has been done with thorium but we haven't tried that at all. We should open up a field of different contrast substances and different methods of use.

Dr. Golden: I think that is absolutely right. We have been too lax in stimulating the researchers on this problem. In France, for many years, some of the workers have used thorium preparations and as far as I know they do not give this flocculation effect.

L. Sante, M.D., St. Louis, Missouri: We have had the same difficulty with the demonstration of polyps in the colon that everyone else has had. It isn't a simple thing, and I think the repeated examination and the general constancy of the lesion in any particular location should be required before definite diagnosis is rendered. We have found in recent years that turning a patient on his side after administration of the barium works much better. If the patient can't evacuate all of his barium, as is frequently the case, turning him on his side, although it does introduce fluid balance, allows you to see the rest of the colon very well. I haven't had experience with the high kilovoltage method. I should think that it is best to give the ordinary barium enema first, then use a high kilovoltage examination as a supplementary examination and follow that with double contrast enema. It will also give you the opportunity of determining the constancy of the lesion by different methods of examination which I should think would be a very great aid.

Dr. Golden: Dr. Sante referred to the so-called lateral decubitus film which was the method Fisher was using in Germany in 1927. That was the first double contrast procedure that I saw. I myself have not used the lateral decubitus procedure but I believe that is an additional help at least in some cases.

A. F. Rossitto, M.D., Wichita, Kansas: Dr. Eckert, if you had a patient with a polyp in the ascending colon, one in the transverse colon and some in the descending colon and sigmoid, how would you handle it to determine the source of bleeding and what would you do to eradicate that?

Dr. Eckert: Depending on how extensive the involvement is, colon resection may become necessary. I think that the whittling away technique of removing polyps from various areas has very limited returns from the standpoint of keeping the patient permanently well. Colectomy can be done on properly prepared patients with a low mortality rate. Patients with an anastomosis to the rectum lead an entirely normal life, having no more than two to four bowel movements per day.

H. B. Hunt, M.D., Omaha, Nebraska: I would like to point out that the primary place where the responsibility falls is not with the radiologist. Don't you think, Dr. Eckert, we can do more to best meet this problem of carcinoma of rectosigmoid area by better teaching of our health officers and medical students in proctoscopic examinations? Don't

you think we are quite lax as medical educators in that connection?

Dr. Eckert: At least 65% of carcinomas of the colon and rectum arise within reach of the examining finger or sigmoidoscope. The same distribution is true of adenomatous polyps. It is true from those figures that adequate training in the examination certainly would do much to reduce the problem. However, every patient who has polypoid lesions demonstrable on sigmoidoscopic examination must have careful radiologic studies of the remainder of the colon which can only be done with the use of these techniques, so we can't forget them by any means and they are a very important part of the work-up of a patient.

K. A. Hultborn, M.D., Stockholm, Sweden: I was surprised to hear that polyps and carcinoma in the colon and rectum have the same distribution. A paper on the distribution of polyps and carcinoma has been published from the Mayo Clinic based on a series of clinical cases. But others have found in autopsy series that polyps are more common than usually reported in the proximal part of the colon, transverse colon and sigmoid colon. In a large European series of 1800 autopsies, only 20% of polyps were found in the rectum.

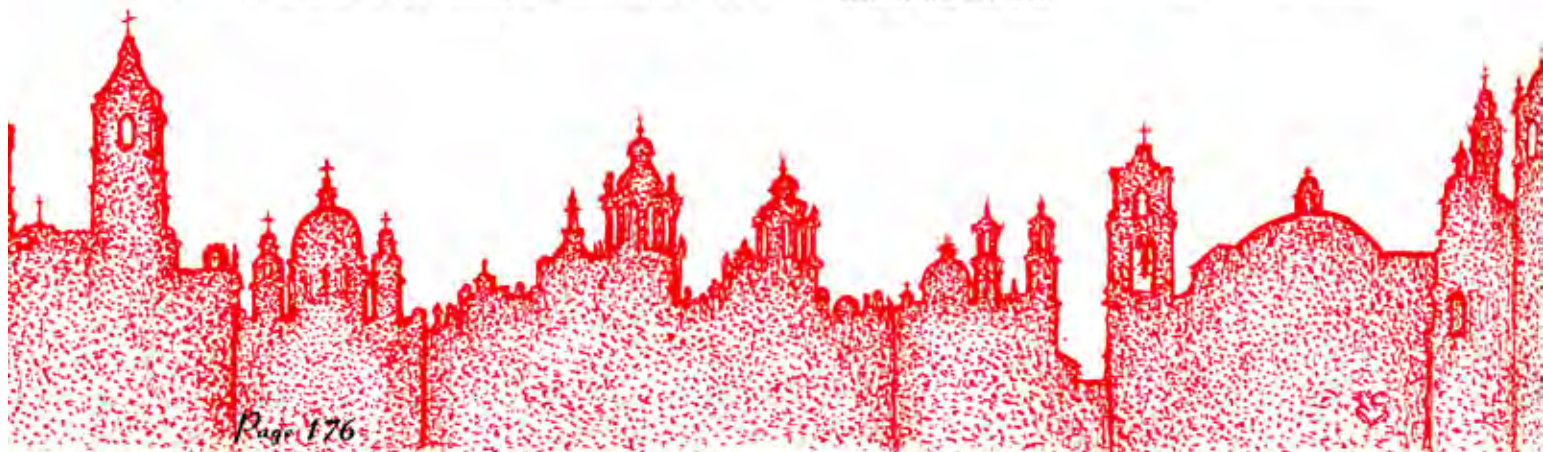
R. F. Niehaus, M.D., San Diego, California: Dr. Golden, do you have any experience with the technique of examination advocated by Dr. Templeton.

Dr. Golden: I have not used that technique and only in very rare cases have I had the colon evacuated through a tube with the patient on the table. It may well be that Dr. Templeton can show things that way that we can't with the ordinary method, but I don't know from personal experience.

Subsequent history: In 1952 the patient expired in heart failure without clinical evidence of metastases; no autopsy was done.

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4. Reticulum-Cell Sarcoma of the Transverse Colon

Contributed by HUGO F. ELMENDORF, JR., M. D., San Antonio, Texas

THE PATIENT was a 19-year-old girl in July 1953 when she complained of watery diarrhea of three years' duration which had been diagnosed as due to amebiasis. A mass was palpable in the left upper abdominal quadrant. The roentgenologic examination revealed a narrow colon with irregular mucous membrane pattern, widening of the mid-transverse portion and an irregular filling defect to the left of the midline.

Dr. Golden: A single film following a barium enema shows that the entire colon and the terminal portion of the ileum are filled. The cecum is markedly shrunken and has smooth walls. The ileocecal valve is abnormally wide, presumably held open by fibrosis of the wall around it. The terminal ileum shows no abnormality. The entire colon is shortened and smooth. The descending portion, the sigmoid and rectum are narrowed and show irregularities of the margin consistent with small ulcers. The walls of the middle third of the transverse portion are distended by mass about 8 cm in length and 6 cm in width. An irregular barium shadow is superimposed on this mass which suggests an ulcer. At the proximal end of the mass is a similar but smaller area. Along the lateral margin of the upper half of the descending colon are some fine projections, two or three of which can be seen along the medial margin of the ascending colon.

If the colon distal to the cecum were normal, this would be interpreted as amebiasis. The overall picture is ulcerative colitis, which could be responsible by itself for the shrinking of the cecum and the widening of the ileocecal valve. The fine irregularities, however, suggest amebic ulcerations rather than the flat shallow pits characteristic of ulcerative colitis which can be seen elsewhere. The mass is probably a fungating carcinoma, unusual at the age of 19, which probably arose from a polyp.

Dr. Golden's impression: ULCERATIVE COLITIS with fungating CARCINOMA.

Roentgenologic Impressions Submitted by Mail

Ulcerative colitis	32
Amebiasis	26
Ameboma	22
Lymphosarcoma	15
Carcinoma	12
Others	9

Dr. Regato: J. T. Swenson, M. D., of Colby, Kansas, suggested lymphosarcoma.

P. C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): This is probably an inflammatory lesion involving the cecum and ascending colon as well as elsewhere. However, it does appear as though there is an intussuscepting tumor in the mid transverse colon.

Operative findings: In July 1953, an emergency intervention was decided upon. An apparently inflammatory

mass was found on the left transverse colon; several mesenteric nodes were proven inflammatory on frozen section. The mass was resected. Postoperative roentgentherapy was given.

Dr. Horn: This tumor is ulcerated superficially, forms a large submucosal mass and invades the muscle on its deep aspect. It is composed of fairly uniform, more or less rounded cells of moderate size. There is nothing about the individual cells to indicate their nature; nor can I make out any special pattern of growth. This picture presents me with the problem of distinguishing between undifferentiated carcinoma and reticulum cell lymphosarcoma. At times this distinction may be relatively easy — areas of a definite epithelial grouping of the cells may be found. At other times it may be virtually impossible. In this case, I can find no reason to regard the tumor as carcinoma and my diagnosis therefore is lymphosarcoma (reticulum cell type). Another point is the infrequency of carcinoma in the young age groups whereas lymphosarcoma, although much less common in general than carcinoma, affects children and young adults with relatively much greater frequency.

Fig. 1—Roentgenogram showing narrowing of descending colon and widening of transverse portion with irregular filling defect to the left of the midline.



Like the rest of the non-epithelial tumors, lymphosarcoma occurs less often in the large bowel than elsewhere in the gastrointestinal tract. The suggestion has been made that lymphosarcoma primary in the gastrointestinal tract runs its clinical course more slowly than lymphosarcoma in general. However, the results of Warren and Lulenski were not particularly favorable and Helwig and Hanson have suggested that some of the apparently favorable results reported may have been based upon the misdiagnosis as sarcoma of some of the benign lymphomas of the rectum. When we reviewed our lymphosarcomas of the colon and rectum recently, we found that all were associated with more or less generalized disease. In approximately half, we did not realize the dissemination at the time the diagnosis of lymphosarcoma of the large bowel was made but became aware of it only in retrospect after observing the patient over a period of time.

Dr. Horn's diagnosis: LYMPHOSARCOMA (reticulum cell type) of the colon.

Histopathologic Diagnoses Submitted by Mail

Reticulum cell sarcoma	115
Lymphosarcoma	15
Anaplastic carcinoma	18
Others	5

Dr. Regato: P. Masson, M.D., of Montreal, Canada, felt that a mucin stain was necessary to distinguish between reticulum cell sarcoma and anaplastic carcinoma. P. Brachetto-Brian of Buenos Aires, Argentina, and M. B. Dockerty, M.D., of Rochester, Minnesota, were of the same opinion. L. V. Ackerman, M.D., of St. Louis, Missouri, had the advantage of a mucicarmin stain and concluded to a reticulum cell sarcoma.

A. P. Stout, M.D., New York, New York (by mail): Although it is impossible to be certain, I believe this is a reticulum cell lymphosarcoma. It is a massive growth, there is no evidence of mucin secretion (on mucicarmin stain) and at its margin the growth is continuous with some hyperplastic lymphoid follicles, a phenomenon I have observed before in gastrointestinal lymphosarcomas.

Subsequent history: The patient was well until November 1953 when she complained of pain in the left lower abdominal quadrant where a mass was palpable. An operation revealed the mass to be adherent to the descending colon; numerous nodules were found throughout the abdomen. Shortly afterward the patient expired. Autopsy revealed liver metastases. A mass 8 cm in diameter was attached to the cecum.

A. O. Severance, M.D., San Antonio, Texas: We found that the rest of the colon was negative, there were no amoebic ulcers and there was no ulcerative colitis. We saw some of the reticulum fibers wrapped around too many of the cells and concluded it ruled out carcinoma.

Dr. Golden: It is very difficult for me to believe that the colon was normal. The ileocecal valve was wide open as we see it in any fibrotic condition and the contours particularly the descending colon appear abnormal. I just can't understand this.

H. F. Elmendorf, Jr., M.D., San Antonio, Texas: Unfortunately I did not attend the autopsy. I was able to speak to the man who did the postmortem examination, he assured me the colon was normal, but I am a little skeptical even now.

Dr. Eckert: Our experience with primary lymphosarcoma of the large bowel has been just as Dr. Horn has indicated. Most of the cases have had very unsatisfactory courses. However, primary lymphosarcomas of the stomach have run a much more benign course, and I think that this is the lesion that has given rise to the belief that primary visceral lesions in lymphosarcoma have a more benign course

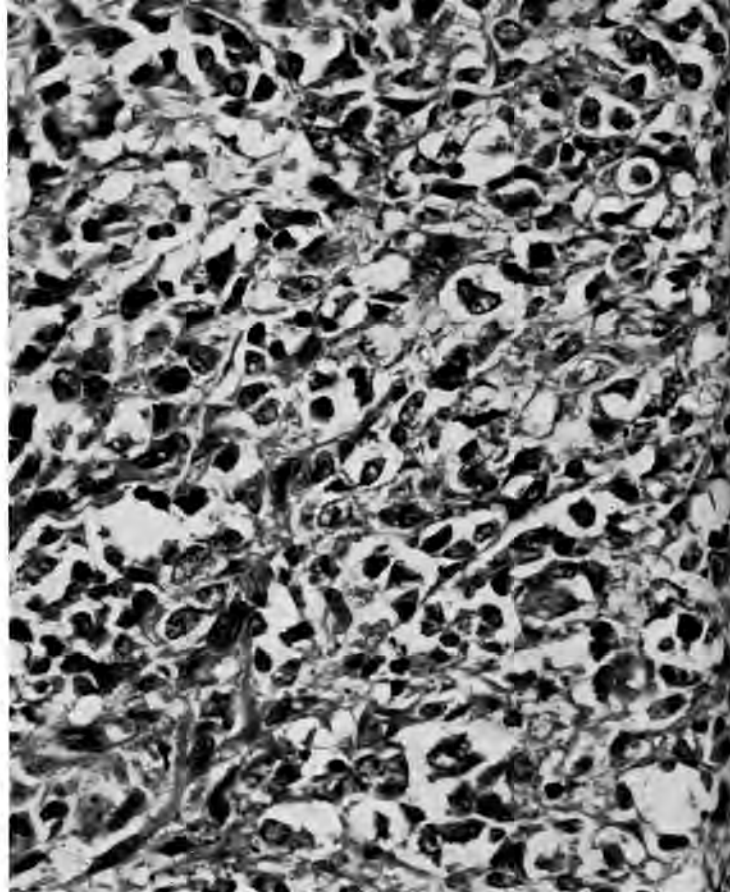


Fig. 2 — High power photomicrograph showing typical reticulum cell sarcoma; no especial pattern can be discerned.

than carcinoma. *Dr. Regato,* do you feel that postoperative radiotherapy is indicated if there is no gross evidence of tumor left and if the lymph nodes are negative?

Dr. Regato: That is the same question that arose here last year in lymphosarcomas of the small bowel; the position we take is that radiotherapy is indicated as a postoperative procedure whenever the surgeon has any doubts as to the adequacy of removal, whether of the primary or of the metastases. We would not, however, submit a patient to an extensive routine irradiation of the abdomen in all cases.

J. J. Gramling, M.D., Milwaukee, Wisconsin: I have recently seen a couple of lymphosarcomas of the small intestine, one of which had apparently come close to the muscularis, both of these arose in the mesentery of the small intestine. I have had no experience with the large bowel lesions as described here.

M. Berthrong, M.D., Colorado Springs: I would like to ask Dr. Horn if he knows if Dr. Murray has had any experience with the cells such as we see in this tumor and others like it in tissue culture as a contrast to cells which look like lymphocytes? We are getting back to the difficulty with nomenclature and whether or not we should call this a lymphosarcoma or reticulum cell type, and tissue culture might have an answer.

Dr. Horn: I can't answer with any degree of authority about the tissue culture studies on these cells. But it is my impression that this group of lesions, the lymphoid tumors in general, have been one of the most difficult groups to grow on tissue culture.

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5. Metastatic (?) Carcinoma of the Wall of the Sigmoid Colon

Contributed by ROBERT S. HAUKOHL, M.D., Milwaukee, Wisconsin

THE PATIENT was a 31-year-old lady who in January 1950 complained of diarrhea of three months' duration and recent bloody stools. A mass could be palpated in the left lower quadrant. Sigmoidoscopy revealed no tumor or ulceration up to 14 cm.

Dr. Golden: A postevacuation film following a barium enema discloses a long constriction involving the lower two-thirds of the sigmoid with destruction of the mucosa. The proctoscopy showed that the rectum was normal. Just above the constriction is an irregularity about 3 cm in length along the inferior margin suggesting a mass along one side of the wall. Proximal to this are several masses of fecal matter which possibly made the palpable mass described in the left lower quadrant. The mass in the proximal third of the transverse colon is probably fecal matter but could be a polyp. Just proximal to it is a narrowing, on the inferior margin of which is a small oval barium shadow which could be an undermined ulcer.

The long constriction in the sigmoid ought to be the result of inflammation, with a granulomatous reaction proximal to it. Amebiasis or regional colitis could be responsible. A carcinoma could but rarely does produce a long constriction. Carcinoma may be complicated by inflammation but this usually extends in both directions.

Dr. Golden's impression: (1) INFLAMMATORY CONSTRICTION of the sigmoid. (2) Possible EXTRINSIC invasion by MALIGNANT TUMOR.

Fig. 1—Roentgenogram showing smooth constriction of distal sigmoid.



Roentgenologic Impressions Submitted by Mail	
Endometriosis	33
Carcinoma of sigmoid	28
Extrinsic tumor	18
Lymphosarcoma	15
Inflammatory lesion	16
Others	8

Dr. Regato: L. Pascucci, M.D., of Tulsa, Oklahoma, suggested that the changes could be due to irradiation. Dr. Wendell Stampfli of Denver suggested endometriosis invading colon.

P. J. Hodes, M.D., Philadelphia, Pennsylvania (by mail): The smooth constriction in the sigmoid is due to the lesion arising outside of the large bowel. I believe this is a primary pelvic malignant tumor secondarily affecting the colon.

Operative findings: On January 31, 1950 the patient was operated upon. A tumor was found involving the sigmoid colon firmly attached to the left ureter; there were enlarged lymph nodes along the aorta. A resection and end-to-end anastomosis was done, the left ureter was divided and anastomosed.

Dr. Horn: There is an area where tumor tissue forms the base of an ulcer and the submucosa is freely invaded. The bulk of the tumor, however, is outside the muscularis, which shows relatively little involvement. The tumor is composed of cords of moderate sized cells of distinctly epithelial aspect. The extramural location of the bulk of the tumor, the relative lack of pleomorphism and the architecture

Fig. 2—Gross specimen showing growth on wall of sigmoid colon.



of the cords and strands of tumor cells suggest the possibility that this may be a carcinoid. This suggestion is appreciably stronger in sections sent me by Dr. Haukohl than in the section included in my seminar set. However, well-defined gland spaces are present in appreciable numbers and for that reason, I am inclined to take this out of the carcinoid group. Because of the gross morphology and because the histologic picture for the most part is not that of the usual large bowel carcinoma, I must consider the possibility that this is a metastasis—perhaps from the ovary or perhaps from another site in the gastro-intestinal tract.

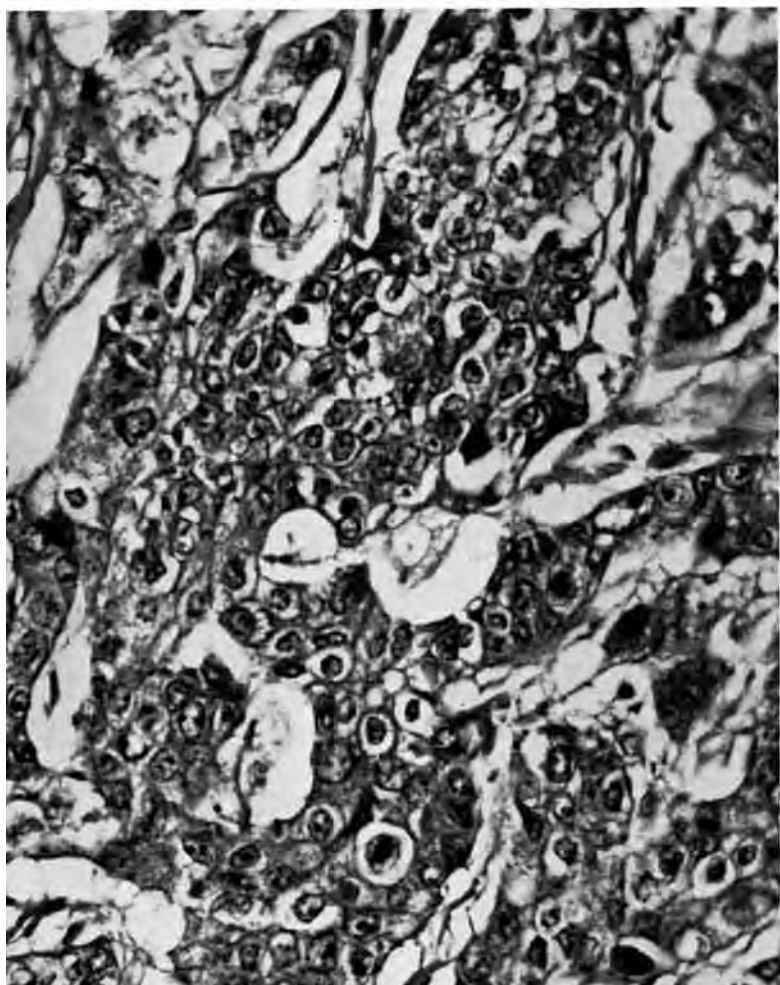
Although portions of this tumor seem to be completely incompatible with carcinoid, I discard that diagnosis reluctantly. Some years ago I reported the observation of mucin secretion in two tumors I thought were carcinoids—one of the transverse colon and one of the ileocecal valve. The latter showed argentaffin granules also. Since then I have encountered a number of tumors that make me wonder if it is not possible for some tumors to show differentiation toward both mucin-secreting cells and basigranular cells—just as we encounter adenocanthomas in a number of viscera.

Dr. Horn's diagnosis: CARCINOMA (possibly metastatic.)

Histopathologic Diagnoses Submitted by Mail

Adenocarcinoma	52
Metastatic carcinoma	36
Ovarian carcinoma	31
Granulosa-cell tumor	2
Choriocarcinoma	4
Adenocanthoma	8
Others	12

Fig. 3— High power photomicrograph showing solid cords of tumor cells; the pattern suggests a metastatic carcinoma or possibly a carcinoid.



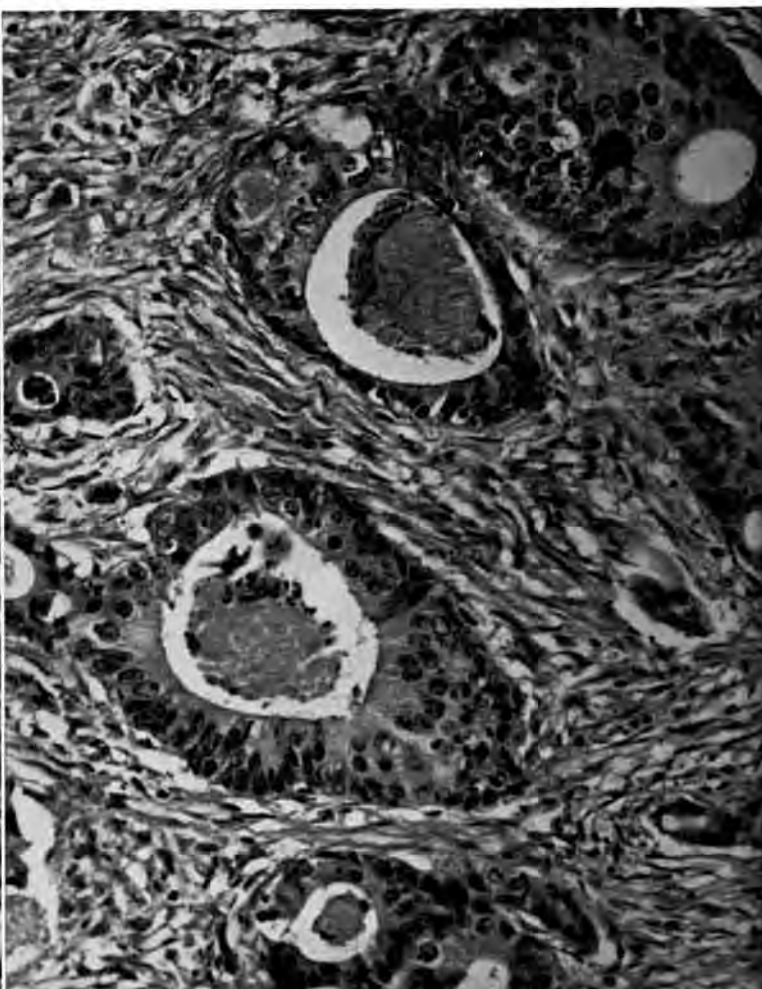
Dr. Regato: A. P. Stout, M. D., of New York City, New York, commented that this tumor showed marked tendency to spread through lymphatics and that the unusual involvement of the sigmoid suggests that it is metastatic. A. O. Severance, M. D., of San Antonio, Texas, M. Wheelock, M. D., of Chicago, Illinois, H. W. McFadden, Jr., M. D., of Omaha, Nebraska, suggested an ovarian primary.

M. B. Dockerty, M. D., Rochester, Minnesota (by mail): This tumor has a "gonadal flavor." We think this is an ovarian adenocarcinoma with secondary invasion of the sigmoid.

Subsequent history: The ureteral anastomosis broke down and considerable retroperitoneal inflammation resulted. In February 1950 she was reoperated. Three months later she expired with urinary sepsis and bowel obstruction. No autopsy was done.

Dr. Eckert: If this is a metastatic tumor I think there is very little the surgeon could do other than avoid obstruction. If it be a primary tumor, then the question of extent of resection of the primary carcinoma arising in this portion of the sigmoid could be discussed. In the past, lesions from this portion of the intestine have been resected in much too conservative a manner to avoid a large incision and the mobilization of the splenic flexure and to retain continuity of the bowel. We feel that resection of the entire left colon should be carried out, with mobilization of the splenic flexure, and that only in this way can adequate removal of the lymph bearing tissues be carried out.

Fig. 4— Moderate power photomicrograph showing glandular pattern entirely consistent with a primary carcinoma of the colon.



L. Lowbeer, M.D., Tulsa, Oklahoma: Some years ago we saw a case very similar to this one with a large tumor mass ulcerated into the sigmoid. We had a complete post-mortem examination and the tumor was believed to be primary in the ureter. It had the looks of a transitional cell carcinoma. Tumors of such kind do originate in the ureter. Therefore, any information as to the ureteral mucosa would be of great importance.

Dr. Eckert: Involvement of one or the other ureter in lesions of the colon is not infrequently encountered; when such involvement is present and mobilization cannot be effected, I believe resection of the ureter should be carried out. In most cases I believe that it is far safer to remove the kidney than to leave it in place and expect it simply to undergo atrophy from ligation for there is danger of development of pyelonephritis in the postoperative period.

H. Wiley, M.D., Garden City, Kansas: I wonder what the lymph nodes showed? It was mentioned they were enlarged but I don't believe we had any report on the histology of them.

Dr. Regato: The information given was that the ureter was not the site of the primary lesion. It was easily reanastomosed; apparently the invasion was not extensive. Lymph node involvement was not proven.

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6. Lymphangioma of the Transverse Colon

Contributed by ROBERT W. BYRNE, M.D. and SILVANUS A. MORTON, M.D., Milwaukee, Wisconsin

THE PATIENT was a 54-year-old man in March 1953 when he gave a history of hemorrhoidectomy 18 months previously at which time numerous polyps of the colon had been seen. There had been no rectal bleeding or constipation but he had suffered occasional bouts of diarrhea.

Dr. Golden: A postevacuation film following incomplete filling of the colon with barium discloses an oval defect about 2.0 cm in diameter in the middle third of the transverse colon. Immediately distal to this the inferior margin of the colon is flattened for a distance of about 2.5 cm. At the proximal end of the transverse colon are some small areas of diminished density which might be either polyps or small fecal masses. One in particular suggests a polyp. The constriction in this area is apparently a peristaltic contraction but the contour on the distal side is consistent with

slight intussusception. The proximal colon presumably failed to fill because of spasm or irritability but the reason is not clear from this film.

Dr. Golden's impression: (1) POLYPOID MASS of the transverse colon. (2) Possibly POLYPOSIS of the proximal transverse colon.

Roentgenologic Impressions Submitted by Mail

Carcinoma of colon.....	43
Polyp.....	33
Metastatic carcinoma.....	15
Lipoma.....	6
Various malignant tumors.....	4
Others.....	7

Dr. Regato: Milo Harris, M.D., of Spokane, Washington, also suggested a polypoid lesion in the transverse colon. James W. Barber, M.D., of Cheyenne, Wyoming, made a diagnosis of polyp.

Paul C. Swenson, M.D., Philadelphia, Pennsylvania (by mail): This looks like an incompletely filled colon; there might be a polyp in the transverse portion, but who can tell without fluoroscopy?

Operative findings: In March 1953 a 4 cm segment of the transverse colon was removed containing a hemispherical cystic mass 3 cm in diameter covered by normal mucosa; the cyst contained pale amber fluid.

Dr. Horn: In the submucosa is an empty, cystic cavity (multiloculated in some sections) lined by endothelium. I take the lesion to be of lymph vessel origin and therefore a lymphangioma of lymphangiectasis. This lesion is identical with some we have encountered, not too rarely, in the small intestine, but not in the colon. There have been incidental autopsy findings, presenting as small, soft, yellow, sometimes multiple polyps. We have classified them as cavernous lymphangiomas, just as a number of blood vascular lesions are classified as angiomas, although they are probably really malformations.

Vascular tumors in general are rare in the intestine and lymphangiomas have received even less attention in the literature than have hemangiomas. Both apparently occur even less often in the large than in the small intestine. Dr. Swigert, of Denver, in reporting a case in 1948, found only two previous reports in the literature. I know of at least one report he missed.

Fig. 1—Roentgenogram showing filling defect on transverse colon.



Dr. Horn's diagnosis: CAVERNOUS LYMPHANGIOMA of the transverse colon.

Histopathologic Diagnoses Submitted by Mail

Lymphocele, lymphangioma, lymphectasia, lymphocyst	40
Hemangioma	26
Vascular lesion, hemorrhage	19
Colitis	12
Pneumatosis	9
Hypertrophy, prolapse	7
Not enough of what?	1
Others	18

Dr. Regato: Bela Halpert, M.D., of Houston, Texas, made a diagnosis of angioma with hemorrhage. N. Puente Duany, M.D., of Havana, Cuba, qualified it as lymphangioma. M. Wheelock, M.D., of Chicago, Illinois, wavered between lymphangiectasia and pneumatosis.

A. P. Stout, M.D., New York, New York (by mail): The lesion consists of two cystic spaces lined by a fibrous membrane on the inner surface of which are occasional flattened cells. The cysts are not perfect spheres but somewhat wrinkled as if partially collapsed. This may be a case of pneumatosis cystoides intestinalis or it may be a lymphangioma. Without knowing what was in the cavities I cannot be certain which. If the cavities showed foreign body giant cells and inflammation, I could be sure they were gas cysts, but they do not: the flattened lining cells may be endothelia. There is a feature in favor of lymphangioma: the occasional foci of smooth muscle in the wall. I therefore believe this is a lymphangioma of the transverse colon.

L. V. Ackerman, M.D., St. Louis, Missouri (by mail): There is a polypoid mass made up of fat and vessels in the submucosa. I am not sure this is a true neoplasm. I favor a diagnosis of angiolipoma (hamartoma).

Robert W. Byrne, M.D., Milwaukee, Wisconsin: The pre-evacuation film did show the complete colon but obliterated the lesion. Fluoroscopically this lesion had a very long stalk; the double contrast showed the stalk well, yet the stalk was not there when the surgeon got in.

Dr. Eckert: I have never encountered a case of lymphangiectasis of the large bowel. The chances are that such a soft mass will not be considered a malignant tumor and limited resection is carried out. If frozen section is done, the burden as to the eventual procedure is shifted on to the shoulders of the pathologist. I do not believe that the pathologist should be forced to accept this burden, however.

Dr. Horn: There was some difference of opinion as to whether this was a blood vascular or lymph vascular lesion, and I think that is a problem that confronts the pathologist all the time. Both may look exactly alike. The presence of blood doesn't really settle the question because you can always have hemorrhage into a lymph vessel lesion and likewise the blood may be drained out of a vascular lesion. But I don't think the difference of opinion here is extremely important. Dr. Ackerman did suggest hamartoma; you can use hamartoma to cover a lot of things. I have seen polyps of the large bowel looking identically grossly with what I presume this looked like, and yet they turned out to be genuine adenomatous polyps.

Dr. Golden: Presumably the surgeon saw nothing abnormal in the transverse colon distal to this shadow. Dr. Byrne says that flat area was the base of the stalk.

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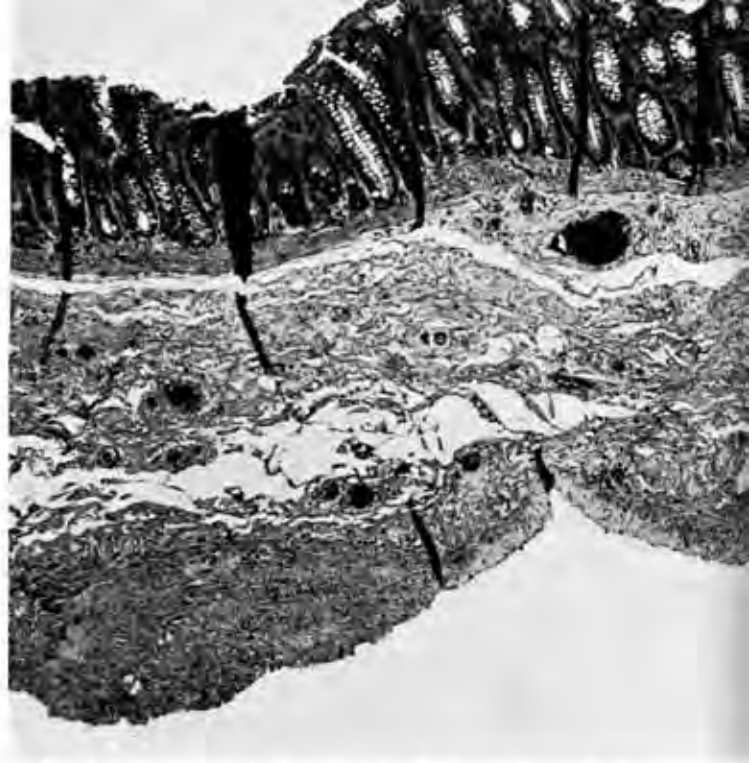


Fig. 2 — Low power photomicrograph showing endothelium-lined cystic space in sub-mucosa.



7. Hodgkin's Disease Involving the Cecum

Contributed by LAUREN V. ACKERMAN, M. D., St. Louis, Missouri

THE PATIENT was a 63-year-old man who in April 1953 complained of intermittent cramping and abdominal pain of five months' duration: there had been occasional melena and a loss of 20 lbs. in weight. On palpation a mass 6 x 10 cm could be felt in the right lower abdominal quadrant.

Dr. Golden: A pre-evacuation film of the colon discloses very little barium in the cecum and terminal ileum although the remainder of the colon is distended. It would appear that the cecum and ascending colon are irritable. The ileocecal junction is wide and the faint shadow of the terminal ileum is narrow and irregular. On both sides of the ileocecal junction the medial wall of the cecum and ascending colon is irregular while the lateral wall appears normal. The cecal tip is turned up. A linear barium shadow turns upward toward the ileum, which could be the proximal end of the appendix, although its lumen appears irregular. If the patient has a history of previous appendectomy, this could be a fistula to the ileum.

This much irritability is unusual with a carcinoma of the cecum, but in rare instances irritability is present, because of secondary infection. The same can be said for lymphosarcoma and carcinoid. This much extension of the disease on the ileum is most unusual in carcinoma. A tuberculous granuloma would well give this picture, particularly the wide ileocecal junction. An appendix abscess should not produce the irregular margins or the melena or loss of weight.

Fig. 1 — Roentgenogram showing filling defect of the cecum.



Dr. Golden's impressions: (1) TUBERCULOSIS, (2) LYMPHOSARCOMA, (3) CARCINOMA.

Roentgenologic Impressions Submitted by Mail

Carcinoma of cecum	43
Granuloma, tuberculosis	32
Carcinoid	13
Tumor of appendix	12
Others	10

Dr. Regato: P. J. Hodes, M. D., Philadelphia, Pennsylvania, and G. M. Tice, M. D., Kansas City, Kansas, suggested the possibility of an argentaffinoma. M. T. Harris, M. D., Spokane, Washington and L. M. Pascucci, M. D., Tulsa, Oklahoma, thought of a possible granuloma. L. C. Collins, M. D., Houston, Texas, suggested a carcinoma of the cecum.

P. C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): The appearance of the proximal colon suggests a mass movement due to spasm so that there is probably some inflammatory process there. A granulomatous process would be more apt to give this picture than a tumor.

Operative findings: In April 1953 a right colectomy was performed with removal of a part of the terminal ileum. A large nodular mass extended over the cecum, distal portion of ileum and ascending colon and mesocolon, surrounding completely the bowel, but mostly on the posterior surface.

Fig. 2—Photograph of surgical specimen showing the irregular surface of the tumor.



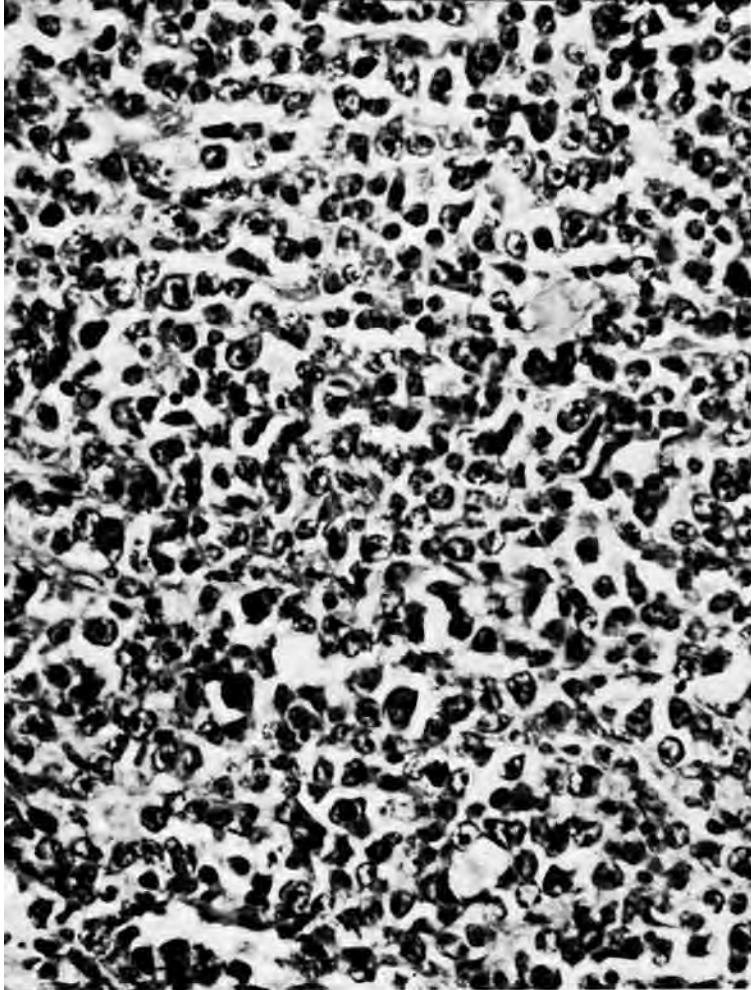


Fig. 3—High power photomicrograph showing uniformity of cells in superficial part of the lesion.

Dr. Horn: This tumor involves all the layers of the bowel wall. It invades rather than destroys the muscle coat. As a tumor composed of diffuse sheets of cells without organization, it again brings up the problem of distinguishing the lymphoid tumors from undifferentiated carcinoma. In the superficial part of this lesion the cells are fairly uniform, having ovoid, regular nuclei and little cytoplasm. More deeply, however, there is more variation. Lymphocytes are numerous and occasional neutrophil leukocytes and even a rare eosinophil are seen. The large cells are larger and more variable than superficially. They have vesicular nuclei and prominent nucleoli. Gigantic forms, sometimes multinucleated, are fairly common. Because of the pleomorphic character of the lesion and because I am willing to accept these large cells as Reed-Sternberg cells, I consider this to be Hodgkin's disease. Apparently Hodgkin's disease occurring as a solitary gastrointestinal tumor, resembles lymphosarcoma in incidence and clinical course. The Warren and Lulenski series of lymphoid tumors included almost as many instances of Hodgkin's disease as of "lymphosarcoma" and "malignant lymphoma" together. I have not encountered any in our material.

Dr. Horn's diagnosis: HODGKIN'S DISEASE.

Histopathologic Diagnoses Submitted by Mail

Hodgkin's sarcoma	43
Hodgkin's disease	41
Reticulum cell sarcoma	28
Lymphosarcoma	22
Anaplastic carcinoma	6
Melanoma	5
Others	9

Dr. Regato: G. Gricoureff, M. D., Paris, France, made a diagnosis of lymphosarcoma. C. Oberling, M. D., Paris, France, also made a diagnosis of lymphosarcoma with par-

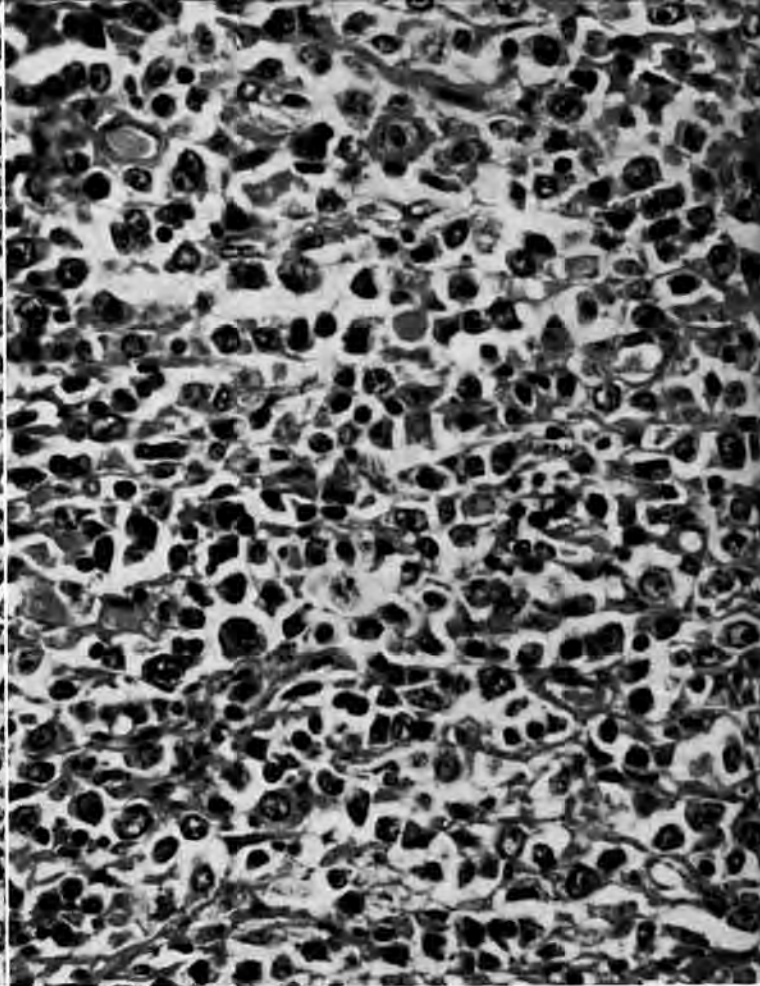


Fig. 4—High power photomicrograph showing variety of cell types and pleomorphism in deeper area of the lesion.

ticipation of reticular cells and formation of giant cells. V. R. Khanolkar, M.D., Bombay, India, L. V. Ackerman, M.D., St. Louis, Missouri, and J. Engelbreth-Holm, M. D., Copenhagen, Denmark, preferred a qualified diagnosis of reticulum-cell sarcoma.

M. B. Dockerty, M. D., Rochester, Minnesota (by mail): Our diagnosis is lymphoblastoma, Hodgkin's type; the lesion is of the highly malignant type and others might favor an interpretation of reticulum-cell sarcoma with giant tumor cells.

A. P. Stout, M. D., New York, New York (by mail): The presence of small multinucleate cells resembling Reed cells and the fibrosis suggest Hodgkin's disease. The very marked proliferation of reticuloblasts suggests reticulum cell sarcoma. Together this probably means Hodgkin's sarcoma.

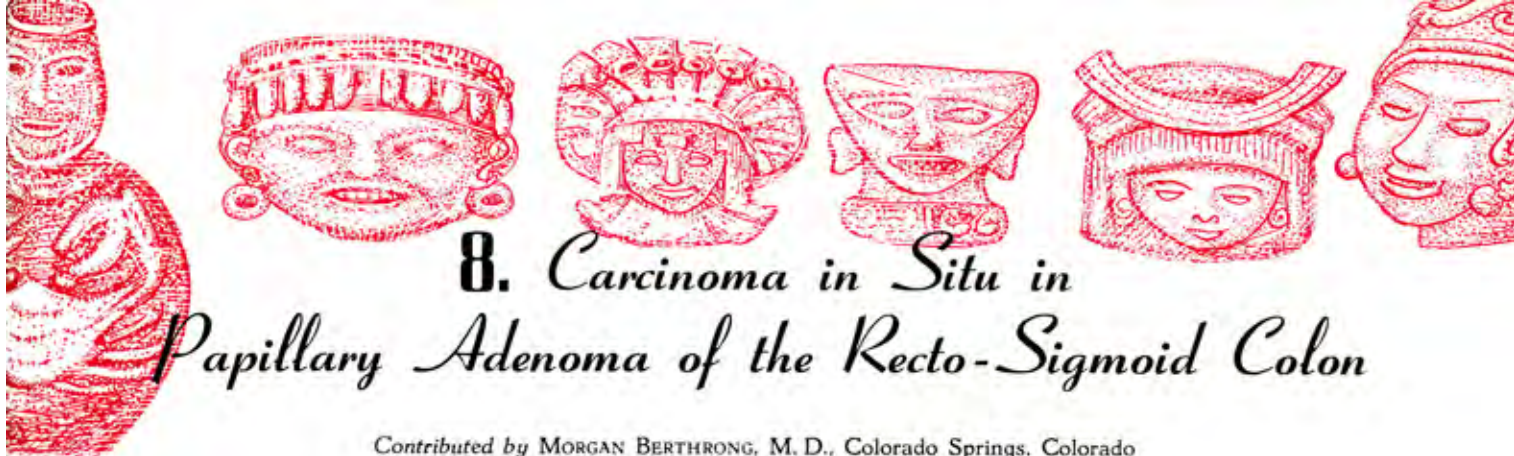
Subsequent history: Four of nine regional lymph nodes were found involved.

Dr. Eckert: I have had no experience with Hodgkin's sarcoma involving the cecum or the large bowel. However, I think most surgeons would say that all the indications for surgical exploration are present in this case. The results of this surgical procedure are in general good for carcinoma but for Hodgkin's disease, I am sure quite poor.

Dr. Golden: I have had a case of hyperplastic tuberculosis of the cecum and terminal ileum which produced a gross pathological picture that would be indistinguishable from this.

Reference

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8. Carcinoma in Situ in Papillary Adenoma of the Recto-Sigmoid Colon

Contributed by MORGAN BERTHRONG, M. D., Colorado Springs, Colorado

THE PATIENT was a 61-year-old man in January 1954 when he complained of intermittent bloody stools of two years' duration and intermittent diarrhea of seven years' duration. Four months previously a hemorrhoidectomy had been done but he had continued to bleed. Proctosigmoidoscopy revealed an ulcerated lesion 13 cm above the anus.

Dr. Golden: A single pre-evacuation film following a barium enema shows evidence of shortening and smoothness of the entire colon consistent with ulcerative colitis. In the distal half of the transverse colon is a moderate constriction about 6-7 cm in length. On the inferior margin of the proximal end of this is a barium projection suggesting a wedge shaped crater measuring about 1.5 cm across its orifice.

The constriction suggests an infiltrating carcinoma which occasionally arise on ulcerative colitis. The shadow suggesting a crater is probably an excavation in the carcinoma.

Dr. Golden's impression: CARCINOMA of the transverse colon, complicating ulcerative colitis.

Roentgenologic Impressions Submitted by Mail

Ulcerative colitis	58
Ulcerative colitis with carcinoma	29
Carcinoma	16
Tuberculosis	9
Others	5

Fig. 1 — Roentgenogram of colon showing shortening and smoothness.



Dr. Regato: G. M. Tice, M. D., Kansas City, Kansas, and F. J. Gorishek, M. D., Denver, Colorado, also made a diagnosis of carcinoma on ulcerative colitis.

P. C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): This looks like a diffuse ulcerative process in the colon; there may be an associated cancer in the proximal transverse.

P. J. Hodes, M. D., Philadelphia, Pennsylvania (by mail): Ulcerative colitis "growing horns" in the proximal transverse colon.

Operative findings: In March 1954 a laparotomy was done. Externally the bowel was normal and no tumor was palpable, many large lymph nodes were seen from the sigmoid to the splenic flexure. Endoscopy through colotomy revealed a sessile polyp. The mucosa was reddish brown thickened and superficially ulcerated; at the lower end of the ulceration the mucosa was thickened and almost polypoid. Forty centimeters of the colon were resected with 35 lymph nodes with end-to-end anastomosis.

Dr. Horn: This case appears to me most identical with Case 3, except that the preparation is such that the arborescent pattern is not so well demonstrated. Like Case 3, this lesion includes an area of atypism. I do not see invasion and would regard this as carcinoma in situ in a papillary adenoma. It is often very difficult to decide upon the proper surgical procedure for these lesions when they occur in the rectum, where, unfortunately, they are more common than in the rest of the colon.

Dr. Horn's diagnosis: CARCINOMA IN SITU in PAPILLARY ADENOMA.

Histopathologic Diagnoses Submitted by Mail

Adenocarcinoma	45
Ulcerative colitis	26
Carcinoma in situ	26
Colitis with carcinoma	15
Colitis with pseudo polyp	12
Adenomatous polyp	8
Polyp with carcinoma	8

Dr. Regato: C. A. Hellwig, M. D., Halstead, Kansas, and J. B. Hartney, M. D., Chicago, Illinois, also made a diagnosis of carcinoma in situ. R. Willis, M. D., Leeds, England; J. Engelbreth-Holm, M. D., Copenhagen, Denmark, and L. Benitez-Soto, M. D., Mexico City, made a diagnosis of adenocarcinoma.

P. Masson, M. D., Montreal Canada (by mail): Structure of sessile papilloma but with very basophilic cells. At a very restricted point the muscularis mucosa is invaded, consequently probable cancer, but early.

D. C. Dahlin, M. D., Rochester, Minnesota (by mail): Grade I adenocarcinoma apparently occurring in an epithelium which is regenerating (ancient ulcerative colitis with pseudo polyp?)

L. V. Ackerman, M. D., St. Louis, Missouri (by mail): There is an area of ulceration. I cannot see ameba, histoplasmosis, etc., neither can I call this cancer. There are some aberrations of the epithelium and there is increased fat. Could this be a focal area of chronic ulcerative colitis?



Fig. 2 — Photograph of gross specimen showing superficial ulcerations and scarring.

A. P. Stout, M.D., New York, New York (by mail): A papillary carcinomatosis of the rectum replacing the mucosa without evidence of invasion. I would not classify this as a malignant change in a papillary adenoma because I cannot find any convincing evidence there was a preceding benign papillary adenoma; it may have originated from one and completely replaced it, however, it is interesting that there is no evidence of invasion beneath the muscularis mucosa.

Subsequent findings: No metastases were present in any of the 35 lymph nodes examined. In August 1954 the patient was reported in good condition. A proctoscopic examination revealed no abnormality.

Dr. Berthrong: The gross photograph that was shown was taken after opening the colon, so that we were looking at the longitudinal picture of the colon opened. There was a deep ulceration that appeared therein and it was at the edge of that ulceration that the mucosa was raised and from that area some sections were taken. There were several other small ulcers, several millimeters in size and sections

from those areas did show active ulcers which were compatible with chronic ulcerative colitis. There was scarring of the entire wall of the bowel through the muscles and in the serosa, entirely typical of long standing ulcerative colitis. I would suggest that the sessile polypoid area in the mucosa was not necessarily a papillary adenomata as we usually think of it, but one arising in the mucosa of ulcerative colitis. After the surgical specimen was opened it did appear as though it were an area of hyperplastic colonic mucosa gradually increasing in intensity toward the center area where it assumed the appearance of a true papillary adenoma. Histologically in multiple sections there were occasional areas of infiltration of the muscularis mucosa indicating early invasion. We felt this was an example of adenocarcinoma arising in the hyperplastic mucosa as it occurs in long standing ulcerative colitis. Thirty per cent of patients with ulcerative colitis for more than 10 years might develop carcinoma. I am sure that most figures are not this high but perhaps in the vicinity of 5 to 10 per cent.

Dr. Golden: What part of the colon was resected?

Dr. Berthrong: The lesion which was described in the transverse colon was not examined by the surgeon and we did not have the opportunity to examine it in the pathological laboratory.

Dr. Horn: This lesion looks like a papillary adenoma but I don't think that is at all incompatible with the sequence of events here. Certainly the colonic epithelium in long standing ulcerative colitis does have a tendency to become neoplastic and there is no reason to think it might not go through a benign neoplastic stage before it becomes truly malignant.

L. Lowbeer, M.D., Tulsa, Oklahoma: My slide contains no tumor whatever, but it did contain several small superficial ulcers. That, of course, is entirely compatible with the history of diarrhea of seven years and bloody diarrhea of two years. Some of these ulcers will also be compatible with amoebic colitis; ulcerative colitis is unusual in a man who is 61 years old. I wonder whether amoeba has been looked for or found.

Dr. Regato: We don't have such information, Dr. Lowbeer, I am sorry.

Dr. Eckert: There are several features about this case from the purely clinical standpoint that are of interest. He had a hemorrhoidectomy four months before the exploration; this type of procedure is carried out in patients with ulcerative colitis quite frequently. It is a procedure which is fraught with danger; minor surgical procedures around the anus and rectum are apt to have fulminating exacerbations of their ulcerative colitis even when their actual disease is quiescent at the time that the hemorrhoidectomy is done. This does not always happen, of course, and did not happen in this case. A primary anastomosis of bowel which is involved with ulcerative colitis carries with it a great risk of breakdown of the anastomosis. If a local resection of a segment of bowel is done, it is far better done by exteriorization procedure. However, with a diagnosis of ulcerative colitis with questionable carcinoma or polyp engrafted upon it, I think that surgical intervention should consist of permanent ileostomy, resection of the colon through the lower

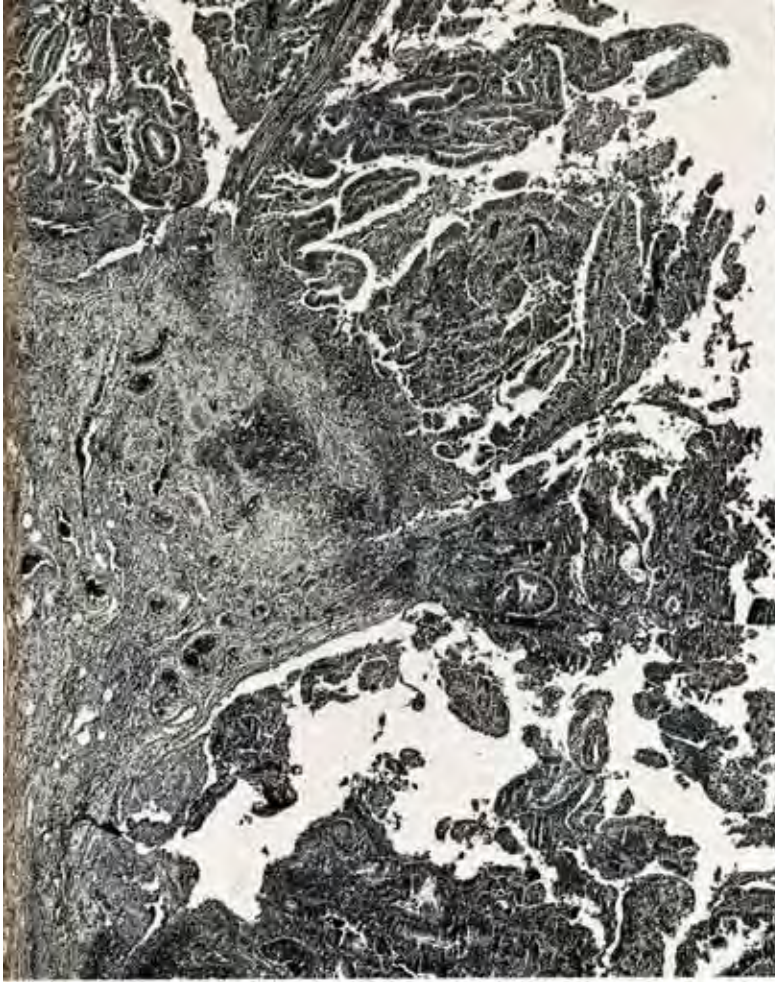


Fig. 3—Low-power photomicrograph showing papillary character of tumor.

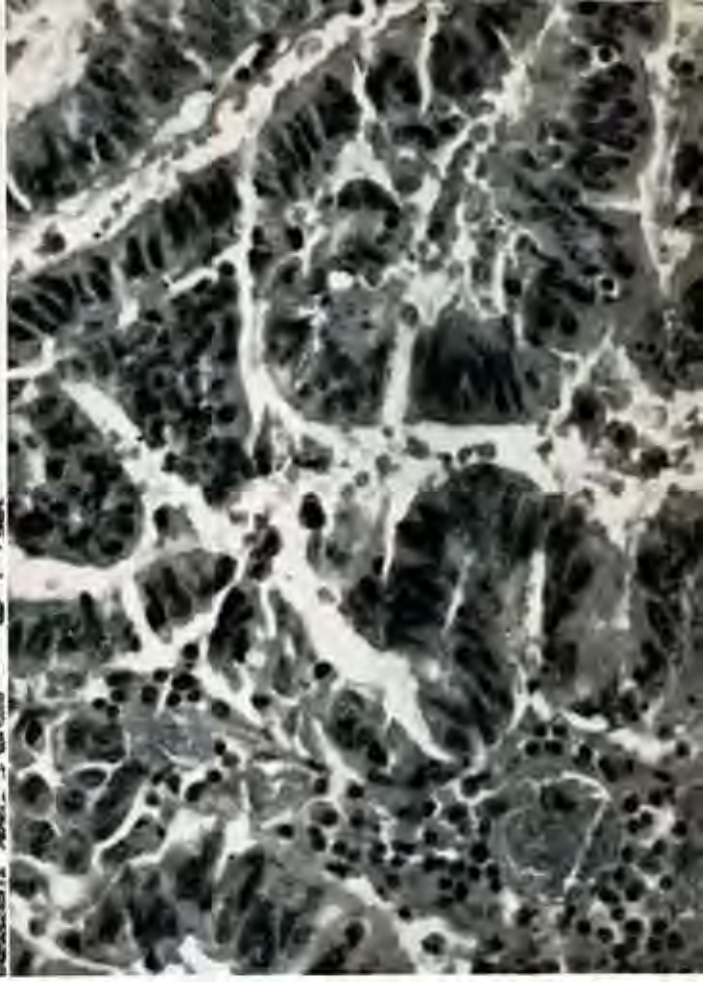


Fig. 4 — High power photomicrograph of well differentiated carcinoma without apparent invasiveness.

sigmoid and later removal of the rectum. A patient who has developed one adenomatous polyp engrafted upon ulcerative colitis, may very well have another such lesion. This man should be followed very carefully in the future.

Karl A. Hultborn, M.D., Stockholm, Sweden: We haven't too much experience with surgical treatment of ulcerative colitis. We have seen only about 15 cases of carcinoma in cases of ulcerative colitis. They have had a higher grade of malignancy and have been more extensive than ordinary carcinoma.

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9. Cavernous Hemangioma of the Transverse Colon

Contributed by JOHN A. CAMPBELL, M.D., Indianapolis, Indiana

THE PATIENT was a 31-year-old woman who in August 1948 complained of lower abdominal pain and bloody stools of four months' duration; there had been a 15 lb. weight loss. Sigmoidoscopy revealed the presence of two large polyps in the sigmoid segment. Radioscopy showed narrowing of transverse colon near the splenic flexure with peristalsis carrying on over the area.

Dr. Golden: The pre-evacuation film following a barium enema discloses a constriction with irregular margins about 8 cm in length in the distal half of the transverse colon. The transition between diseased and normal wall is abrupt, such as is usually seen in carcinoma but which can occur with lymphosarcoma and with granuloma. The cecum is shorter than the average. The rectum is much smaller than is usually shown on a pre-evacuation film. I would like to know how the fluoroscopist demonstrated peristalsis flowing through the constriction. Usually peristalsis in the colon is not seen during a barium enema unless the barium is evacuated through the tube under fluoroscopic observation. The usual implication of this observation is that the muscle is not destroyed and the lesion is probably not a carcinoma. Lymphosarcoma is much more likely to spare the muscle than is carcinoma, at the same time producing irregular masses in the lumen. The texture of a lymphosarcoma is softer than that of a carcinoma, but we have no information on that point.

In the absence of the evidence of flexibility of the wall of the lesion, this would have to be interpreted as a carcinoma. Assuming that the statement is correct, it is more likely to be lymphosarcoma. The significance of the hypertonic cecum and rectum is not clear.

Dr. Golden's impression: Probably LYMPHOSARCOMA of the transverse colon.

Roentgenologic Impressions Submitted by Mail

Carcinoma of colon	45
Lymphoma of colon	43
Inflammatory lesion	14
Polyp	12
Others	2

Dr. Regato: Cyrus W. Partington, M.D., of Denver, and Lois Collins, M.D., of Houston, Texas, also suggested lymphosarcoma.

Paul C. Swenson, M.D., Philadelphia, Pennsylvania (by mail): There is a surgical lesion in the distal transverse colon; the age of the patient and the length of the segment suggest that it is not carcinoma. This is either a localized inflammatory process or one of the lymphomas involving the bowel.



Philip J. Hodes, M.D., Philadelphia, Pennsylvania (by mail): Reticulum-cell sarcoma of the transverse colon?

Operative findings: In August 1948 the patient was explored. The outer surface of the transverse colon presented dark color outgrowths and there was thickening of the wall and considerable inflammation. A resection with end-to-end anastomosis was done.

Dr. Horn: Scattered in the various coats of the bowel wall are a number of large, blood-filled, endothelium lined spaces. Some smooth muscle is present in their walls.

Benign tumors of connective tissue origin are infrequently encountered in the intestinal tract and vascular tumors are particularly rare. They appear to occur less often in the large than in the small intestine. They have been sub-classified both on the basis of gross morphology and localization and on histopathologic grounds.

Fig. 1 — Roentgenogram showing filling defect of transverse colon near splenic flexure.



It is interesting that some hemangiomas, involving portions of the bowel as superficial as the submucosa, may produce symptoms of intestinal obstruction rather than hemorrhage. Hemangiomas of the intestine are more often single than multiple. In studying the vascular tumors in our laboratory, Dr. Martens noted smooth muscle (ranging from a few wisps to appreciable amounts) in a great many of the cavernous hemangiomas and we have not, therefore, separated those with muscular walls from the general group. In this case, the appearance of the vessels suggests that perhaps we might classify the lesion as phlebectasia. The latter is one of Hansen's subdivisions of cavernous hemangioma.

Dr. Horn's diagnosis: CAVERNOUS HEMANGIOMA of the transverse colon.

Histopathologic Diagnoses Submitted by Mail

Hemangioma	108
Vascular lesion	15
Rendu-Osler-Weber's	3
Others	13

Arthur P. Stout, M.D., New York, New York (by mail): This is, of course, one of the rare cases of hemangioma involving the colon. The only question in my mind concerns whether the large vessels have smooth muscle in their walls or if the smooth muscle belongs to the colon. I think some of them have muscular walls, therefore, I will call this a venous hemangioma.

Subsequent history: No follow-up information available at this time.

Dr. Eckert: I personally have not found hemangioma of the small or large intestine in my own operative cases. However, perhaps there are some in the files of our hospital.

Dr. Horn: One of the reported cases of hemangioma involving the rectum has been reported twice. The first report was to the effect of having explored this individual. (I think it was a young teen-age boy). A colostomy was done, and then the hemangioma was treated by injection. Later somebody else reported the subsequent course of events: a recurrence of difficulties that made necessary an abdominoperineal resection.

Dr. Golden: I have seen two other cases: one of multiple hemangiomas on the small intestine and another of a single lesion, but in neither case was the lesion anywhere near this long.

Anthony F. Rossitto, M.D., Wichita, Kansas: Were there symptoms of bleeding in these two cases Dr. Golden?

Dr. Golden: Yes, there were.

Ben Eiseman, M.D., Denver, Colorado: I would like to ask how often are these multiple, and when they do occur should we as surgeons, when we run across one of these, should we run the entire bowel in order to be certain there are no other lesions? Are they always palpable?

Dr. Regato: In a report of hemangiomas of the intestinal tract that I have read, not more than five per cent were found in the large bowel.

Dr. Horn: I think that about 40 per cent of the reported cases have been multiple and some 60 per cent solitary lesions.

Dr. Eckert: I know of one case in which a small lesion was missed at the first exploration. Later exploration was carried out by the same man who found evidence of heman-

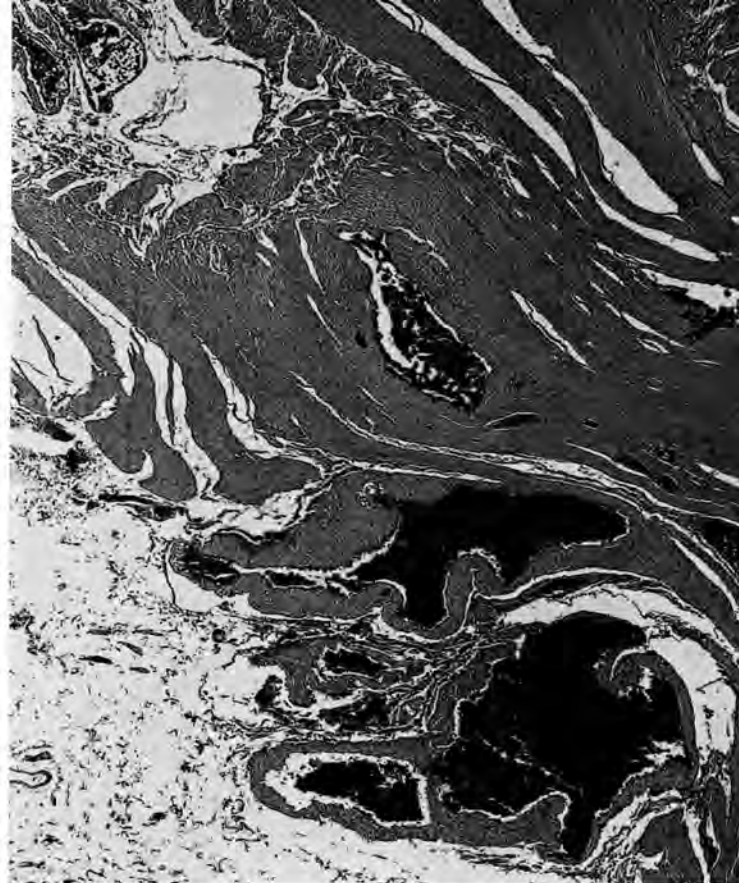


Fig. 2 — Low power photomicrograph showing blood-filled vascular spaces scattered through colon wall.

gioma on the serosal surface of the bowel as well as on the mucosa; evidently the lesion had simply progressed in the interval. I suppose this means that some of them are non-palpable.

Dr. Golden: A bleeding hemangioma of the ileum 2 cm in size, was removed at the Presbyterian Hospital of New York recently. It was not discovered by radiologic examination. The Miller-Abbott tube was put down because the patient was apparently bleeding from the small intestine, the point of bleeding was found and the intestinal contents withdrawn. The approximate level was noted and that led to a fairly accurate surgical exploration.

Karl A. Hultborn, M.D., Stockholm Sweden: I have treated two cases of extensive hemangiomas of the rectum. In both cases there was a cluster of phleboliths in the hemangiomas and it was possible to see it on the roentgenograms.

Dr. Regato: The specimen was calcified so that it made quite a dent on the microtome knife—apparently the lesion was of long standing and hemorrhage had occurred, with subsequent calcification.

Dr. Berthrong: Osler's disease is the multiple type lesion with familial characteristics. We should not give that name to every hemangioma that we see.

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10. Carcinoid (?) of the Descending Colon

Contributed by MACDONALD WOOD, M.D., Mesa, Arizona

THE PATIENT was a 17-year-old girl in January 1954 when she complained of nausea, watery stools and abdominal cramps following a normal delivery. There was some tenderness upon palpation of the left side of the abdomen. Sigmoidoscopy revealed nothing but bloody stools up to 20 cm.

Dr. Golden: The pre-evacuation film following a barium enema discloses evidence of a high-grade obstruction in the proximal third of the sigmoid. Just enough barium has passed proximal to this to disclose an irregular very narrow constriction about 15-18 cm in length, beginning just below the splenic flexure. Along the lateral margin of the barium-distended portion of the proximal third of the sigmoid are some fine lacy barium shadows which appear to be produced by opaque material outside of the lumen and within the wall. In places these shadows appear to connect with the lumen. This appearance suggests the collar button ulcers of amebiasis. The long constriction suggests inflammation. I have never heard of an amebic granuloma this long but that seems the most logical explanation. From the history one would suspect that the patient was a Mexican girl and the prevalence of amebiasis in Latin-American countries is well known.

Dr. Golden's impression: AMEBIASIS and GRANULOMA of the descending colon and sigmoid.

Roentgenologic Impressions Submitted by Mail	
Inflammatory lesion	35
Ulcerative colitis	25
Carcinoma	23
Intussusception	12
McWood's syndrome	1
Others	7

Fig. 1—Roentgenogram showing narrowing of the descending colon.



Dr. Regato: James W. Barber, M.D., of Cheyenne, Wyoming, commented that since this as well as other roentgenograms strongly suggest a diagnosis of carcinoma, such diagnosis should be scrupulously avoided!

Philip J. Hodes, M.D., Philadelphia, Pennsylvania (by mail): One would ordinarily consider this a carcinoma, but if it were a carcinoma it would not be submitted to the SEMINAR. I would suggest Hodgkin's disease, but I am reaching!

Paul C. Swenson, M.D., Philadelphia, Pennsylvania (by mail): Obstructing lesion in the lower descending colon. No sane radiologist would stick his neck out on the basis of this film alone. I am sure that Dr. Golden would agree; that's what he taught me, anyway.

Subsequent history: A diagnosis of segmental colitis was considered and the patient discharged. One week later she was re-admitted with acute abdominal pain. In February 1954 exploration revealed the presence of peritonitis and of a large mass of the descending colon producing obstruction; an ascending colostomy was done. Eleven days later a colectomy was done, there was no evidence of tumor elsewhere.

Dr. Horn: So far as a single section is concerned, this appears to be primarily a submucosal tumor, although there are small foci of mucosal involvement. The tumor is composed of cords and clusters of moderately small, rather uniform cells. Within some groups, the cells are in ribbon-like bands. These features are very suggestive of carcinoid. However, there are a few well-formed glands within the tumor. These cast some doubt upon the diagnosis but I

Fig. 2—Photograph of gross specimen showing narrowing of colon.



believe nevertheless that this is a carcinoid. This may seem inconsistent with what I said in discussing Case No. 5, but in that case portions of the tumor, however small, could be taken for the usual colon carcinoma. The same cannot very well be said for the few glands seen here. This is another case that suggests that carcinoid and carcinoma may overlap.

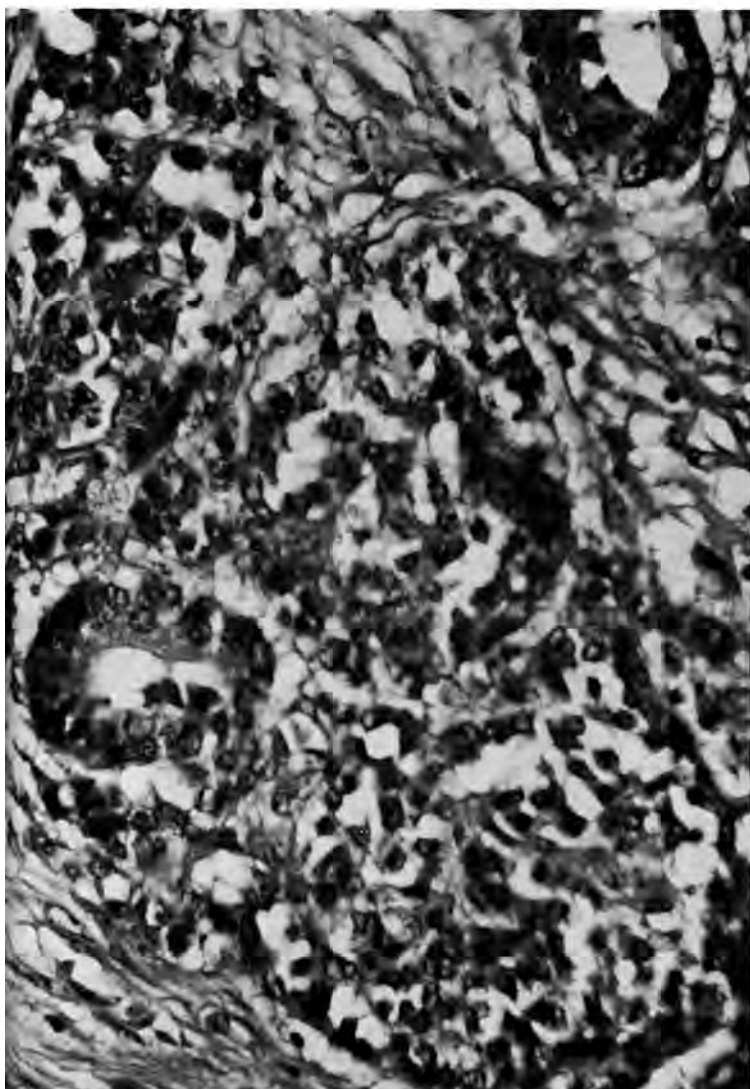
Dr. Horn's diagnosis: CARCINOID of the descending colon.

Histopathologic Diagnoses Submitted by Mail

Adenocarcinoma	58
Metastatic carcinoma	20
Granulosa cell tumor	5
Dysgerminoma	4
Lymphosarcoma	16
Carcinoid	14
Various sarcomas	20
Others	5

Dr. Regato: Carlo Sirtori, M.D., of Milano made a diagnosis of solid carcinoma; Ruben Farias, M.D., of Merida, Yucatan, and V. R. Khanolkar, M.D., of Bombay, India, preferred lymphosarcoma; C. A. Hellwig, M.D., of Halstead, Kansas, made a diagnosis of neuroblastoma and M. Wheelock, M.D., of Chicago, Illinois, questioned the possibility of metastatic dysgerminoma. J. Marshall Neely, M.D., of Lincoln, Nebraska, and P. MacComber, M.D., of San Antonio, Texas, also suggested a metastatic ovarian tumor. C. Oberling, M.D., of Paris submitted a diagnosis of malignant mesoblastoma with endotheliomatous structures. N. Puente-Duany, M.D., of Havana offered hemangioendothelioma.

Fig. 3—High power photomicrograph revealing a pattern that suggests carcinoid, although occasional glandular structures are encountered.



Arthur P. Stout, M.D., New York, New York (by mail): This tumor, it seems to me, must have a primary site elsewhere. It is of epithelial type and has a strong predilection for capillaries. I find no evidence of adenomatous, squamous or secretory differentiation. In a 17-year-old girl the ovary is to be suspected and I suggested metastatic dysgerminoma, with possible retroperitoneal primary.

Dr. Eckert: When perforation of large bowel occurs, complicating the obstructing lesions in the left side of the colon, perforation is not usually at the site of the tumor but is more commonly seen in the cecum rather than at the site of the tumor as was the case here. I would like to know if Dr. Horn thinks that the perforation might have any bearing on the diagnosis of carcinoid tumor.

Dr. Horn: Unfortunately I don't know how I could make it have a bearing on the diagnosis. I don't think that carcinoids have been associated particularly with perforation. I would think in that regard particularly of lymphosarcoma, and this to me does not look at all like a lymphosarcoma.

Dr. Golden: I would like to ask if the pathologist can explain the lacy shadows along the margin of that sigmoid. It is a most unusual picture.

Dr. Horn: I can't really explain them but the tumor in its gross appearance was the most unusual for a tumor, I think, with that long area of narrowing and thickening of the wall.

Anthony F. Rossitto, M.D., Wichita, Kansas: I would like to ask Dr. Golden what his experience is with endometriosis. Does he see perforating lesions of the bowel with endometriosis?

Dr. Golden: I have not seen endometriosis perforate. In the cases I have seen the implants on the surface have produced small indentations on the barium shadow, quite localized, and usually rather low, sometimes associated with intermittent localized spasm. But I have never seen anything like this. The lacy shadows certainly do fit the description of ulcers of amebiasis extending into the submucosa.

Dr. Berthrong: We wondered if there might not have been considerable edema of the mucous membrane below this lesion.

Dr. Golden: I don't see how edema could explain that because edema is usually distributed more or less evenly along the mucous membrane but these apparently represent tiny fissures extending into the wall.

Dr. Goforth: In studying this case I entertained the idea that an angiogenic origin might be considered for this tumor is very vascular. I thought I could see in my section the formation of stasis (?) by the tumor cells. The angiogenic malignant tumors are highly malignant, they spread rapidly and they can occur in younger people.

Dr. Horn: I did not consider it very seriously. I accepted it pretty much as an epithelial tumor and felt fortified in that opinion when I recognized a few reasonably distinct glands.

Leo Lowbeer, M.D., Tulsa, Oklahoma: I would like to second Dr. Goforth's idea.

Subsequent history: General condition deteriorated, there were symptoms of bowel obstruction and palpable nodularities. Patient expired in March 1954. No autopsy was done.

Editor's Note: We are informed that this patient was not of Spanish or Mexican descent. At exploration the transverse colon appeared normal, the descending colon was firm and gave the impression of a "garden hose."



II. Paraganglioma Invading the Intestinal Tract

Contributed by KARL T. NEUBIERGER, M. D., Denver, Colorado

THE PATIENT was a 68-year-old man in September 1953 when he complained of a recurrent epigastric tumor which had been present for eight months. In 1943 he had a resection of a large tumor apparently attached to the stomach; in 1947, 1949, 1950 and 1951 operations were done for recurrent masses in the region of the abdominal scar.

Dr. Golden: Two films are presented, one shortly after and the other four hours after the ingestion of a fairly large amount of a barium suspension. The first film was apparently taken in the prone position with some pressure on the lower part of the antrum and the duodenal bulb. Some antral spasm seems to be present but on this one film nothing suggesting a stomach tumor can be seen. However, this film shows an irregular filling defect 2-3 cm in length in the jejunum about six inches from the duodeno-jejunum junction. The four hour film shows the head of the barium column at the splenic flexure. A trace of barium remains in the stomach. Two adjacent loops of upper jejunum are narrowed and show evidence of destruction of the mucosa over a length of 4 to 6 cm. On one film it is impossible to be certain whether any other loops are abnormal.

Fig. 1—Roentgenogram four hours after ingestion of barium showing head of barium column at splenic flexure. Loops of upper jejunum are apparently narrowed.

This examination discloses at least three abnormal loops of jejunum with destruction of the mucosa. Certain metastatic malignant tumors can do this but the most common cause of multiple malignant neoplasms of the small intestine is lymphosarcoma. Sometimes the constrictions simulate inflammation which can involve multiple levels. The history is consistent with lymphosarcoma probably relieved by radiotherapy.

Dr. Golden's impression: LYMPHOSARCOMA of the small intestine.

Roentgenologic Impressions Submitted by Mail

Gastric sarcoma	51
Carcinoma of pancreas	27
Retroperitoneal tumor	17
Too poor for a guess!	1
Others	15

Dr. Regato: L. Pascucci, M. D., of Tulsa, Oklahoma, G. Tice, M. D., of Kansas City, Kansas, W. Stampfli, M. D., of Denver, Lois Collins, M. D., of Houston, Texas, and Norman Glazer, M. D., of Cleveland, Ohio, all suggested the possibility of a leiomyosarcoma.

Fig. 2—Roentgenogram of the stomach showing normal appearance.



Philip J. Hodes, M.D., Philadelphia, Pennsylvania (by mail): There is a large mass apparently springing from the wall of the stomach. There appears to be a fistulous tract from the stomach and small bowel into the colon. This should be a fibrosarcoma or a neurosarcoma.

Paul C. Swenson, M.D., Philadelphia, Pennsylvania (by mail): I think this is a retroperitoneal tumor with secondary involvement of the small bowel. There is also a possibility of a small bowel primary which was first missed and is now giving trouble.

Operative findings: In September 1953 a laparotomy disclosed recurrent tumor surrounding the transverse colon and producing partial obstruction. There were vascular pedunculated implants on the omentum. The right half of the colon and the terminal ileum were resected. The tumor was rubbery and measured 6 x 10 x 13 cm, it had a smooth reddish-brown outer surface. Nodules with the same appearance were removed from the mesocolon and mesentery.

Dr. Horn: This is the most difficult case in the lot for me to be sure about. There is a great deal of information in addition to the histologic picture that I wish I had. The tumor is cellular and fairly uniform. The cells have abundant cytoplasm which is usually clear. Occasionally, eosinophilic inclusions may be seen in the cytoplasm. The lesion is fairly vascular. To me, the most characteristic thing about it is the grouping of the cells in alveolar clusters, at times in relation to blood vessels. This pattern, better brought out in the silver preparation, suggests the diagnosis of carcinoma but we have no knowledge of visceral involvement other than the statement that originally this patient's tumor was "apparently attached to the stomach." Furthermore, the history of multiple local recurrences doesn't quite sound like carcinoma; nor does this tumor look quite like the common clear cell cancer—that of the kidney. I have tried

to consider this a smooth muscle tumor because they may at times have more or less rounded cells. However, that effort has resulted in failure. I am left with two possibilities: first, that this is an example of the tumor variously known as "alveolar sarcoma," "paraganglioma" or "organoid or malignant granular cell myoblastoma." Despite these various names and disagreement and uncertainty as to the cell of origin of this tumor, it is generally recognized as an entity and as a malignant tumor. Most of these tumors have arisen in skeletal muscle, usually of the extremities. The other possibility is paraganglioma arising from the adrenal medulla or retroperitoneal paraganglia. If I call this a paraganglioma I can cover both of these possibilities.

Dr. Horn's diagnosis: PARAGANGLIOMA.

Histopathologic Diagnoses Submitted by Mail

Myoblastoma	18
Mucinous adenocarcinoma	15
Retroperitoneal tumor	21
Paraganglioma	13
Adrenal carcinoma	8
Lymphosarcoma	8
Metastatic seminoma	5
Sarcoma, unclassified	12
Liposarcoma	8
Fibrosarcoma	5
Myosarcoma	4
Leiomyosarcoma	6
Hemangiosarcoma	7
Others	19

Dr. Regato: G. Gricoureff, M.D., of Paris, and J. B. McNaught, M.D., of Denver, suggested myoblastoma. M. Polak, M.D., of Buenos Aires, also suggested a myosarcoma, he felt that special silver and aniline stains are necessary to eliminate neurosarcoma. C. Oberling, M.D., of Paris, offered a diagnosis of clear-cell leiomyoma to be confirmed by collagen stains; he felt that a mucous stain will also be necessary.

Fig. 3—High power photomicrograph showing cells with abundant clear or pale cytoplasm, occasionally containing granules.

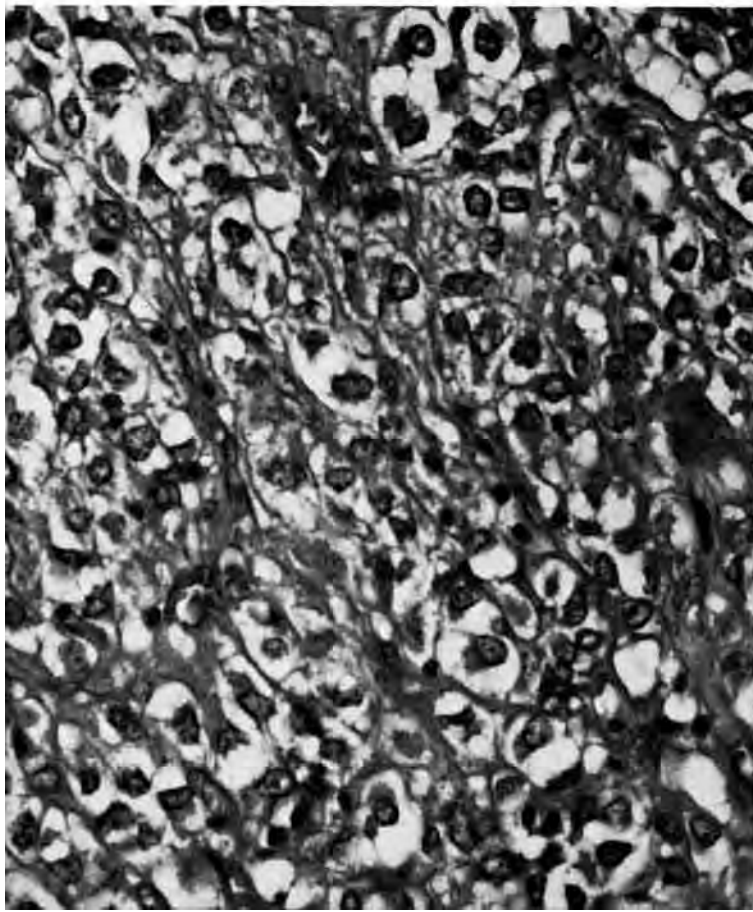
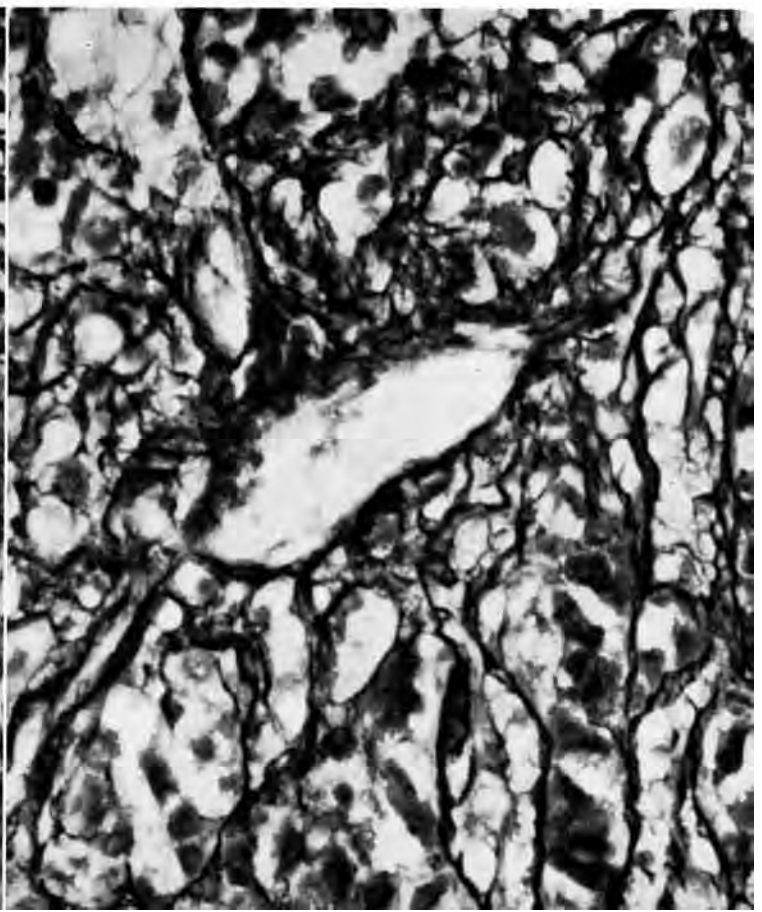


Fig. 4 — High power photomicrograph after silver staining, demonstrating alveolar pattern.



Pierre Masson, M.D., Montreal (by mail): This is a clear cell carcinoma resembling a seminoma, though such diagnosis seems unlikely to be the exact one.

E. H. Soule, M.D., Rochester, Minnesota (by mail): Recurrent anaplastic sarcoma of the leiomyo type.

L. V. Ackerman, M.D., St. Louis, Missouri (by mail): Malignant tumor, unclassified.

A. P. Stout, M.D., New York (by mail): From the morphology I suspect an adrenal-cell cortical carcinoma; I am puzzled by its position, but the slow progress will be fitting.

Subsequent history: In February 1954 the patient was well though weak; there was no evidence of new recurrence or metastases.

Dr. Eckert: This case exemplifies fortitude, both on the part of the patient and of the surgeon. They have gone through considerable trials and tribulations together. I have had no experience with these various tumors with the exception of adrenocortical carcinomas which have uniformly run a very malignant course. The paragangliomas which we

have seen have been relatively benign; we have seen one example of a functioning extramedullary paraganglioma.

Karl T. Neuburger, M.D., Denver, Colorado: This patient was seen about a week or two ago. He said that he had been fishing several times and he expects to go deer hunting; he is nearly 70 years old.

Dr. Golden: Did he have radiotherapy?

Dr. Neuburger: Not to my knowledge.

Dr. Golden: From the radiologic point of view we had no evidence of abnormalities of the large intestine. I don't think a radiologist has any business going off on flights of fancy in offering explanations for some of these unusual situations. He is much better off if he limits his differential diagnosis to the more common of the lesions in the particular organ involved.

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12. Carcinoid of the Rectum

Contributed by ROBERT C. HORN, M.D., Philadelphia, Pennsylvania

THE PATIENT was a 39-year-old man who complained of increasing constipation of long duration and weight loss; four months previously a small polyp had been removed elsewhere. A mass could be felt on rectal palpation but was not visualized on sigmoidoscopy; the liver was enlarged.

Dr. Golden: A post-evacuation film following a barium enema shows the entire colonic mucosa to be well outlined, as in the terminal ileum. No information as to the type of barium preparation is given. It may have contained tannic acid. An oval area of diminished density is shown in the barium shadow of the lower ileum which may be merely a gas shadow but which deserves further investigation. The cecum looks very small but this is probably the result of contraction under the irritation of tannic acid. The mucosal pattern of the rectum is unusual in that it resembles that of the rest of the colon. The folds ordinarily run neatly parallel with the long axis. On the left side of the lower part of the rectum is a very small area in which the mucosa appears smooth, possibly indicating mucosal destruction. The rectum seems slightly compressed to the right as if by a mass although no abnormal soft tissue shadow can be seen. Inasmuch as a mass in the rectum could be felt but not seen, the above mentioned shadow presumably represents a very shallow mucosal flexible ulcer. The problem apparently is to correlate this rectal abnormality with the enlarged liver.

The evidence available does not justify a conclusion, but certain possibilities may be mentioned. One possibility is amebiasis with a liver abscess. Another possibility is invasion of the rectum by malignant disease possibly arising in the bladder with metastases to the liver, although no urinary tract symptoms are mentioned. Duplication of the rectum with carcinoma of the blind pouch and metastases in the liver is another possibility.

No roentgenologic impressions submitted by mail since no roentgenograms were available at the time that other cases were submitted.

Dr. Golden's impression: CARCINOMA of the rectum with liver metastases.

Dr. Regato: Although no film was reproduced in the mailed brochure, some roentgenologists ventured an impression on the basis of the clinical information given: Hirschsprung's disease was suggested by two participants. Others theorized that the removed polyp might have been malignant. Frank Gorishek, M.D., of Denver, suggested carcinoid of the rectum with liver metastasis.

Operative findings: A laparotomy was done. Widespread metastases to liver, mesentery and pelvis were found. Several nodes were removed for biopsy. No intestinal lesions were found except the intramural rectosigmoid mass palpated clinically.

Dr. Horn: The section is of a lymph node more or less completely replaced by a tumor of rather small, uniform epithelial cells growing in cords or narrow, ribbon-like bands, often thrown into complex folds. Although I have raised the question of carcinoid before, this time I feel reasonably sure of my ground in making the diagnosis of carcinoid. Carcinoids involving the large bowel have been reported with increasing frequency in recent years. For the most part they have been incidental findings when they occur in the rectum, like those in the appendix, have metastasized infrequently. The carcinoids of the colon, on the other hand, like those of the small bowel, have had a high incidence of demonstrated malignancy. The concept seems reasonable that they are all malignant but that those in the appendix and rectum are removed before they spread.

Our rectal carcinoids that have presented with the symptoms and findings of carcinoma have been treated by radical surgery. On the other hand, we have considered simple removal adequate for asymptomatic tumors discovered incidentally. We have been particularly disturbed by this case. This man's tumor was regarded as belonging in the incidental group; yet four months later he had advanced intra-abdominal disease and liver metastases.

Dr. Horn's diagnosis: CARCINOID OF RECTUM.

Histopathologic Diagnoses Submitted by Mail

Carcinoid	115
Adenocarcinoma	6
Sarcoma	5
More like this!	1
Others	7

Pierre Masson, M. D., Montreal (by mail): The lesion has been improperly fixed. These cases are very interesting indeed but they would be more interesting if the histologists were given more detailed information and non-stained slides. The hematoxylin-eosin stain is practical but not always sufficient. I am sorry that American pathologists do not seem to recognize any other fixative than formol.

Dr. Horn: This specimen was fixed in Dr. Masson's favorite fixative: Bouin's!

Subsequent history: Seven months after operation the patient was asymptomatic but his liver had increased in size.

Dr. Eckert: I have seen no example of the small carcinoids of the rectum; however, we have seen truly malignant carcinoids within the rectum. We consider carcinoid tumors of extra-appendiceal origin as malignant tumors of slow clinical evolution and low malignancy and we feel they should be treated as malignant tumors in the particular location in which they are seen. Recently one of our guests at Washington University expressed a view which was new to me: he said that lymph node deposits of carcinoid tumors do not necessarily imply malignancy as it does in other tumors!

Franz Leidler, M. D., Houston, Texas: We had a case of an old gentleman who was first seen because of enlarged liver; laparotomy was done, a tumor was found but biopsies were not taken. This patient came to us about a year later during which time he had gotten worse, a small tumor was palpated in the rectum. He died a few months later and he was found to have a rectal carcinoid with evident metastasis to the liver.

Fig. 1—Post-evacuation roentgenogram following barium enema showing no notable abnormality.

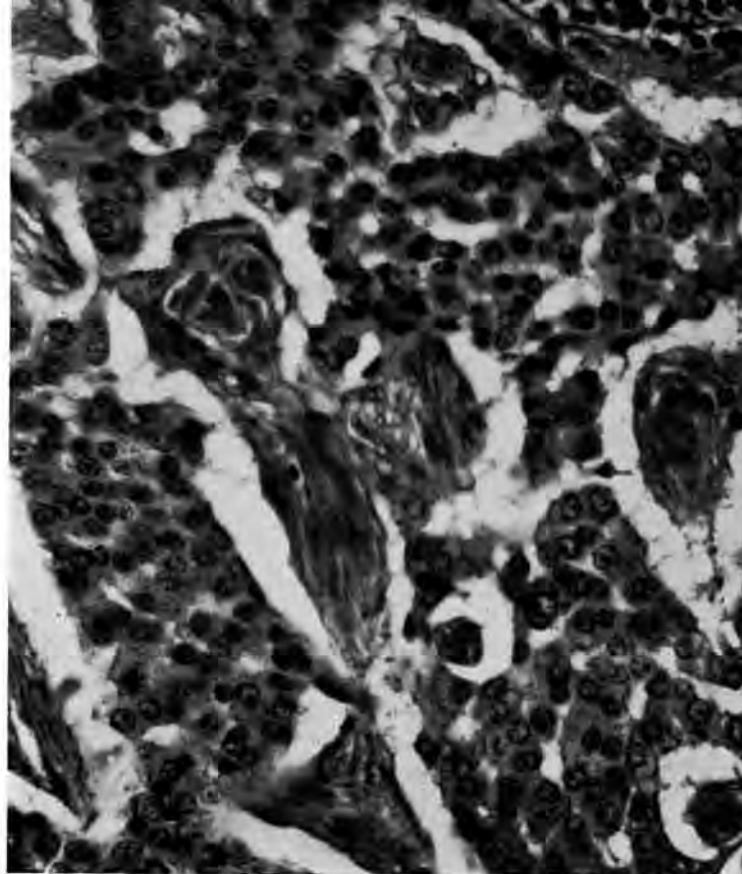


Fig. 2—High power photomicrograph revealing typical pattern of carcinoid metastatic in a lymph node.

J. Marshall Neely, M. D., Lincoln, Nebraska: It seems to me that the clinical behavior of these tumors supports the contention that these are neurogenic in origin. We had a case which was watched over eight years with proven liver metastasis. In other words they certainly do not act like epithelial tumors and I believe they are definitely neurogenic in origin.

H. K. Giffen, M. D., Omaha, Nebraska: It is gratifying that Dr. Horn has finally sold us an argentophillic tumor. I hope for Dr. Golden that the last case proves to be an amoebic lesion.

Dr. Golden: I wonder if Dr. Horn would tell us a little more about the condition of this pelvis. The rectum was displaced; the mucosal pattern of the rectum was most unusual. I would like to know whether there was any evidence of superficial ulceration of the rectum. Do we have any additional evidence?

Dr. Horn: I don't think that the rectum was found ulcerated on proctoscopy. He did have rather extensive peritoneal and omental involvement, the greater portion of which was in the pelvis and certainly there was enough tumor tissue in the pelvis to account for any extrinsic masses.

Dr. Berthrong: It does not seem logical to consider the benignity or malignancy of the tumor in relation to duration for we have all seen papillary adenocarcinomas of the thyroid that exist for years in the lymph nodes in the neck prior to finally killing the patient. Nor does it seem to be possible to determine whether or not a tumor is epithelial or neurogenic in origin on the same criteria.

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13 Papillary Adenoma of the Ascending Colon

Contributed by BURTON A. SHATZ, M. D., and
EUGENE BRICKER, M. D., St. Louis, Missouri

THE PATIENT was a 58-year-old lady in November 1951 when she complained of occasional pain in the right upper abdominal quadrant and increasing diarrhea of two years' duration.

Dr. Golden: A single film taken at an unspecified time after the ingestion of a flocculating barium suspension is available. The ileocecal junction, the cecum and appendix are inadequately shown. At the hepatic flexure there is a filling defect, probably with slight intussusception. A barium shadow projects upward from the distal end of this defect. This suggests barium outside the lumen, but because of the flocculation in the small intestine, it is impossible to be sure. Superimposed on the visualized gallbladder is an oval area of diminished density consistent with a cholesterol stone. In spite of the flocculation the small intestine appears significantly hypertonic, suggesting that the diarrhea may be of psychosomatic origin.

The usual cause of a filling defect like this is a fungating carcinoma or similar neoplastic mass, but the shadow projecting upward is puzzling.

Dr. Golden's impression: CARCINOMA OF THE HEPATIC FLEXURE, possibly with perforation of the transverse colon.

Roentgenologic Impressions Submitted by Mail

Carcinoma	81
Lymphosarcoma	18
Other tumors	15
Intussusception	2
Others	3

Dr. Regato: Philip J. Hodes, M. D., of Philadelphia suggested large carcinoma. Milo Harris, M. D., of Spokane, Washington, made a diagnosis of carcinoma with attempt to intussusception.

Paul C. Swenson, M. D., Philadelphia, Pennsylvania (by mail): There is a lesion in the proximal transverse colon apparently trying to intussuscept. This is a surgical lesion, most probably a carcinoma, but I cannot see the histologic structure in this film.

Operative findings: In November 1951 a right colectomy was carried out. Twelve centimeters from the ileocecal valve a papillary growth 6 cm in diameter was found. Numerous regional lymph nodes were found enlarged.

Dr. Horn: This is a characteristic papillary adenoma. In its gross morphology the polypoid adenoma differs from the much less common papillary adenoma; it is a tumor of glands which has acquired a stalk as the result of peristaltic activity; its glands are fairly regular and the component cells are orderly. There is no evidence of invasive growth in this adenoma. On the basis of the material available to me I consider this lesion benign.

Dr. Horn's diagnosis: PAPILLARY ADENOMA of the ascending colon.

Histopathologic Diagnoses Submitted by Mail

Papillary (villous) adenoma	52
Adenomatous polyp	45
Papillary carcinoma	13
Carcinoma in polyp	5
Adenocarcinoma	2

Dr. Regato: R. Willis, M. D., of Leeds, England, submitted a diagnosis of well differentiated papillary carcinoma, not invasive. V. R. Khanolkar, M. D., of Bombay, India.



Fig. 1 — Roentgenogram showing filling defect of the hepatic flexure of the colon.





Fig. 2—Low power photomicrograph of papillary adenoma.



Fig. 3—High power photomicrograph showing differentiation and no evidence of malignant transformation.

made a diagnosis of adenoma malignum. M. Polak, M. D., of Buenos Aires classified this as a villous adenoma.

M. B. Dockerty, M. D., Rochester, Minnesota (by mail): This is the picture of the so-called compound villous adenoma. In our experience 30 per cent of these lesions, when large, conceal a central area of infiltrating carcinoma.

A. P. Stout, M. D., New York (by mail): This growth has the characteristics of a papillary adenoma with evidence of malignant transformation. Since carcinoma can develop in any part of a papillary adenoma it would not be surprising if other sections showed carcinoma.

L. V. Ackerman, M. D., St. Louis, Missouri (by mail): Papillary adenoma in unusual location.

Dr. Eckert: The large papillary villous tumors that occur away from the rectum and recto-sigmoid offer the surgeon little problem because when he finds them he does the appropriate radical operation for the particular anatomic site. However, when these larger lesions are found within the rectum and rectosigmoid, they do offer a considerable problem: a not too radical procedure might be sufficient to cure with preservation of the anal sphincter. However, when this is carried out and complete pathologic study is performed, a certain percentage of them will show previously unidentified evidences of invasive carcinoma and the operation might have been inadequate.



Charles F. Ingersoll, M.D., Denver, Colorado: Were any of the nodes biopsied?

Dr. Regato: All of the nodes were negative.

Robert Hausman, M.D., Atlanta, Georgia: I would like to ask Dr. Horn a little more about carcinoma in situ in rectum and in polyps of the colon.

Dr. Horn: We see such change fairly commonly in the tips of adenomatous polyps and generally we don't worry too much about it if they are pedunculated lesions. When the change is more widespread we are more concerned, and also in the case of sessile lesions, but so long as invasion is not present and cannot be demonstrated, we have classified it as carcinoma in situ.

Dr. Goforth: I would like to ask Dr. Horn whether he regards the papillary adenoma and the adenomatous polyp as neoplastic and if so, what is the basic difference. If they are both neoplastic, then theoretically speaking they are more likely to go through malignant transformation than would be the case if either of them is a localized hyperplasia.

Dr. Horn: I believe they are both neoplastic. The chief difference between them being the pattern of growth as we observe it. The actual cell of origin is supposed to be slightly different and probably is not of very great importance. There is a greater incidence of subsequent development of malignancy in papillary adenoma and therefore they are something more to worry about. I wonder how much overlap there is between the two and how many lesions actually do show features of both. And whether the distinction between them is as important as we have been trying to make it over recent years.

Dr. Golden: Will this tumor explain the diarrhea, or do we have to look elsewhere?

Dr. Horn: I should think it could.

Franz Leidler, M.D., Houston, Texas: I believe that all of us who are in hospital pathology face a considerable problem with regard to these two types of polyps when we are consulted by surgeons. It is generally felt I believe that a simple snare excision of an adenomatous polyp possibly with fulguration of the base is an adequate procedure. On the other hand the papers by Sunderland seem to indicate that it is not an adequate procedure with regard to the papillary adenomas, that a more extensive resection has to be carried out. And I think in my experience this has become a major point of importance when being asked for advice by surgeons with regard to such lesions.

Leo Lowbeer, M.D., Tulsa, Oklahoma: I believe one of the essential differences between papillomatous adenomas and non-papillomatous adenomas is the great number of capillaries which are found in papillomas. It is perhaps this picture which promotes a tendency for tumor cells to get into capillaries. Such a phenomenon is also probably found in the papillary tumors of the thyroid gland.

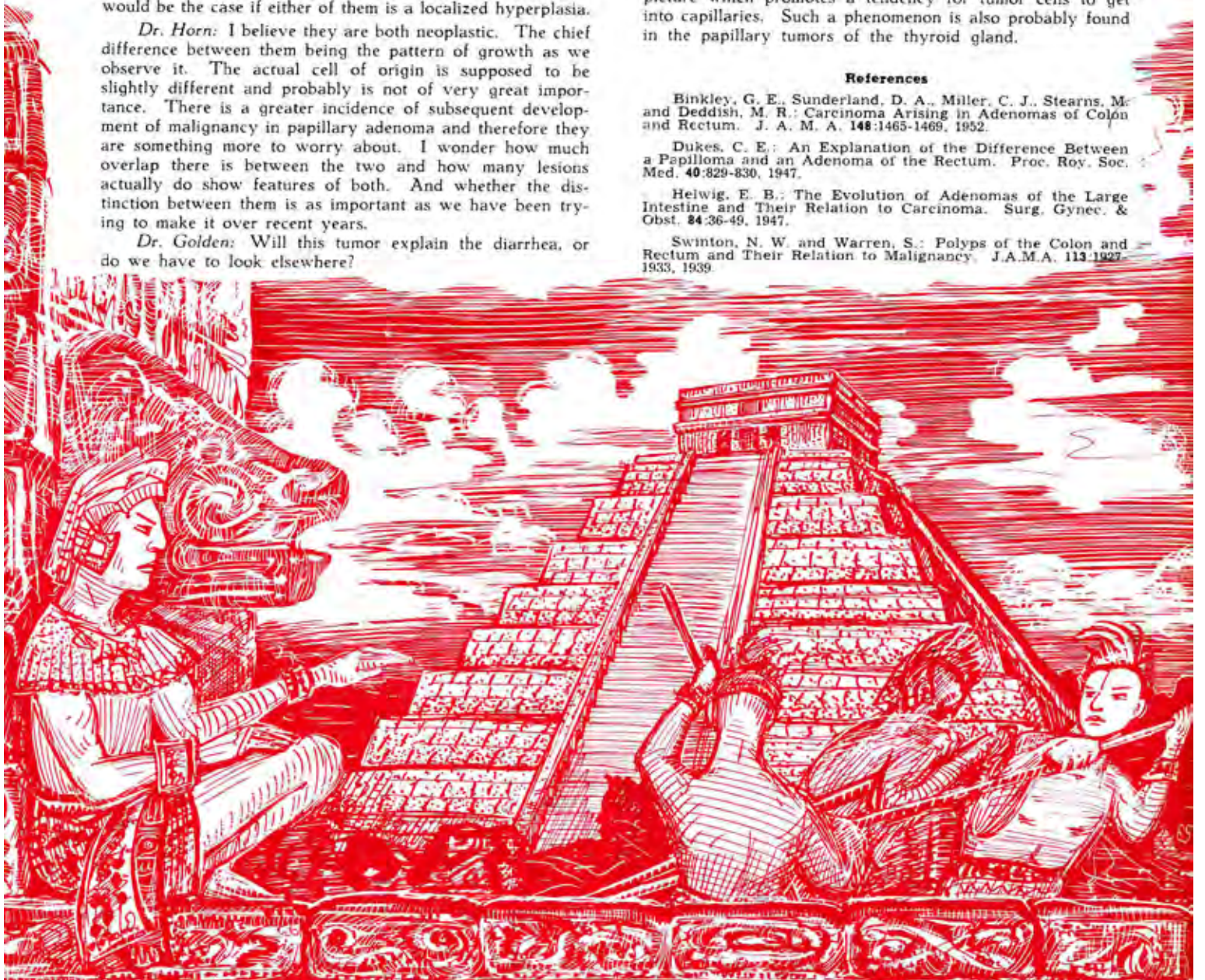
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"patience is a most important ingredient of the art of living which we find indispensable in others." (editor's note)



Follow-ups

Issue No. ONE

Miscellaneous Tumors

3. **Mixed tumor of the skin of the nose:** Reported living and well in April, 1955, without recurrence.
4. **Papillary adenoma of the colon:** Reported living and in good health in January, 1955.
6. **Gynandroblastoma of the ovary:** No sign of recurrence when last examined in February, 1955.
8. **Undiagnosed tumor of the vulva:** This patient died six months after the surgical intervention without evidence of local recurrence but presenting roentgenographic evidence of lung metastases.
9. **Leiomyosarcoma of the buccal mucosa:** In July, 1952, this patient showed evidence of local recurrence. In September, 1953, a surgical resection was done but she died in February 1955 with local recurrence and pulmonary metastases.
11. **Metastatic carcinoma of the breast:** This patient expired in January, 1951, with generalized metastases.
12. **Hemangiopericytoma of the stomach:** In March, 1955, this patient was reported living and well, at the age of 97 years; he is able to eat a regular diet, weighs 165 lbs, and is free of symptoms.
14. **Thymoma:** This patient was reported living and well in April, 1955.
15. **Mixed tumor of the parotid:** This patient died of intercurrent disease in April, 1952, without evidence of recurrence or metastases.
16. **Endometrioma:** In July, 1955, this patient appeared well and had shown no other manifestations of endometriosis.

Issue No. TWO

Bone Tumors

4. **Osteosarcoma of a rib:** This patient died with recurrent disease in November, 1950.
5. **Fibrosarcoma (?) of the femur:** This patient underwent an amputation and was last seen in August, 1952, when she appeared well.
6. **Monostotic Paget's disease:** This patient was examined in December, 1953, when he complained of pain in the right flank; there was no increase in the deformity of the spine.
8. **Reticulum-cell sarcoma of the scapula:** This patient expired in June, 1951, with generalized metastases.
10. **Neuroblastoma in dorsal vertebra:** This patient expired in May, 1952; no autopsy was done.
11. **Fibrosarcoma arising from pre-existing giant-cell tumor of the femur:** This patient developed pulmonary metastases and expired towards July, 1951, with symptoms of brain metastases; no autopsy was done.
12. **Metastatic myeloma of the tibia:** In August, 1954, this patient sustained a fracture of the patella which healed under a plaster cast. In February, 1955, he experienced pain in the knee, an arthrotomy was done but no abnormality was found. He was well in April, 1955.

Issue No. THREE

Thoracic Tumors

1. **Benign thymoma:** In October, 1953, two large nodules 3 and 6 cm in diameter, were discovered in the right lung. In April, 1954, a thoracotomy was offered but the patient failed to return.
2. **Lymphoma of the lung:** This patient was reported living and well in February, 1955.
6. **Hodgkin's disease of the mediastinum:** On December, 1954, this patient was reported the subject of a generalization of the disease; no other details given.
7. **Anthracoilicosis of the lung:** This patient was reported in good health on May, 1955.
11. **Metastatic granulosa-cell tumor:** This patient expired in May, 1953, presenting soft tissue and skeletal metastases.
13. **Thymoma:** Last seen and in good health in June, 1955.
14. **Lymphoma of the lung:** This patient was reported living and in good health on April, 1955; he works as a salesman and becomes slightly dyspneic only when climbing stairs.
16. **Thymoma:** In April, 1954, this patient was reported "coming along pretty well; his legs don't swell so much."

Issue No. FOUR

Gastric Tumors

1. **Lymphosarcoma of the stomach:** In May, 1955, this patient was reported well but refusing re-examination.
5. **Gastric polyp:** This patient was last seen in August, 1954, when she declared to feel well and to be able to eat regular size meals. She has been unable to regain weight.
6. **Carcinoma in situ and gastric polyp:** This patient was last seen in June, 1955; he appeared well but had lost some weight and presented macrocytic anemia.
7. **Benign gastric polyp and adenocarcinoma:** This patient expired towards the end of 1952 with symptoms of recurrent carcinoma of the stomach; no autopsy was done.
8. **Gastric varices:** This patient reports to be in excellent health in 1955, at the age of 44 years; she boasts of not having visited a physician in years.
9. **Ectopic pancreatic tissue:** This patient was well when last seen in July, 1953.
11. **Leiomyoma of the stomach:** This patient was last seen in June, 1954, when he declared to eat well and to have gained weight.
13. **Leiomyosarcoma of the stomach:** This patient is reported to have gained weight and to be in good health in May, 1955.
14. **Carcinoma in situ of the stomach:** This patient was well and symptomless in June, 1955, maintaining his normal weight.

Issue No. FIVE

Tumors of the Small Intestine

1. **Benign adenomatous polyp of duodenum:** This patient was last seen in May, 1955; she was well and complained only of mild digestive symptoms; no roentgenologic examination was done.
7. **Leiomyoma of the jejunum:** In May, 1955, this patient was reported well. There has been no recurrence of bleeding.
11. **Carcinoid of the ileo-cecal junction:** This patient was last seen in good health in November, 1954.
12. **Hyperplasia of Brunner's glands:** This patient was reported well and symptomless in July, 1955.
16. **Adenocarcinoma of the jejunum:** Remained well until January, 1955, when he developed acute intestinal obstruction and died. Autopsy revealed large carcinomatous masses on the small bowel; there was carcinoma, causing obstruction at the site of the resection.



Our Guest Speakers

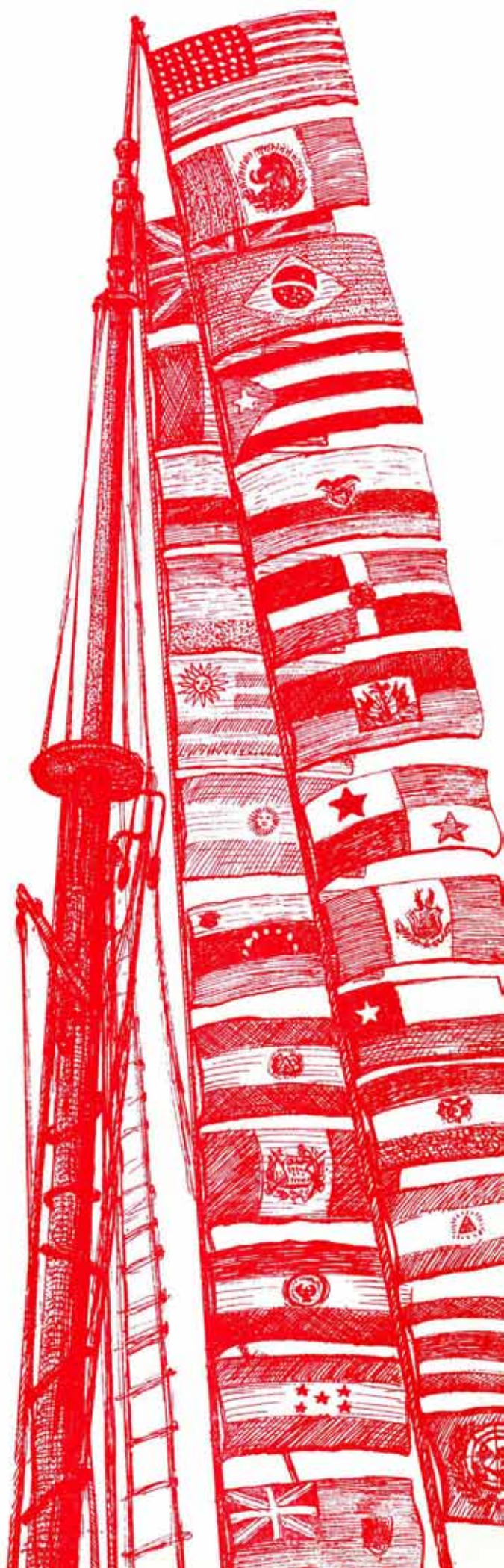
ROSS GOLDEN, M. D., Emeritus Professor of Radiology, Columbia University, New York, Visiting Professor of Radiology University of California at Los Angeles. Dr. Golden graduated from Harvard University Medical School in 1916. He has published several books on radiodiagnosis and is recognized as one of the world authorities in the roentgenologic exploration of the gastro-intestinal tract. Dr. Golden was the guest of the Penrose Cancer Hospital.



ROBERT C. HORN, JR., M. D., former Associate Professor of Surgical Pathology, University of Pennsylvania and Director of the Tumor Clinic at the University Hospital of Philadelphia; he has recently assumed his duties as pathologist to the Ford Hospital in Detroit, Michigan. Dr. Horn graduated from the Medical School of Yale University in 1937. He has written numerous articles on surgical pathology. Dr. Horn was the guest of the College of American Pathologists.



CHARLES L. ECKERT, M. D., Associate Professor of Surgery, Washington University Medical School and Director of the Tumor Service at Barnes Hospital, St. Louis, Missouri. Dr. Eckert graduated from Washington University Medical School in 1939. Despite his youth, Dr. Eckert is well-known for his devotion to the teaching and training of young surgeons and for his didactic clinical discussions. Dr. Eckert was the guest of the Penrose Cancer Hospital.



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