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Bulletin of the
**University of Minnesota Hospitals
and
Minnesota Medical Foundation**



"Second-Look" Operations

BULLETIN OF THE
UNIVERSITY OF MINNESOTA HOSPITALS
and
MINNESOTA MEDICAL FOUNDATION

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I. "SECOND-LOOK" OPERATIONS FOR GASTRIC,
COLIC AND RECTAL CANCERS
(An Interim Summary)*

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F. John Lewis, M.D.
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Although the concept of the second-look operations has been explained in previous publications,^{3,5,7,10,11} the plan of treatment, presenting current methods, and the present status of the clinical study and auxiliary pathological studies of the second-look material will be described.

Despite some gains through early diagnosis and the use of improved primary operations for visceral cancers, there still remains a large group of patients who are not cured by their initial procedures. This group includes essentially those patients whose lymph nodes were cancerous at the initial operation. For example, a 29% five year survival rate was achieved in lymph node-positive cases of cancer of the colon treated at the University Hospitals in 1948 in contrast to a 71% five year survival rate in the lymph node-negative group. The systematic use of secondary operations following the original excision of a visceral cancer has been employed since 1949 in an effort to cure a higher proportion of the patients who have metastatic cancer within lymph nodes at the time of the primary operation. Some of our experiences with this plan have been gratifying and would suggest that this concept of multiple operations offers new hope in the treatment of some advanced malignancies. Additionally it has provided a unique opportunity to study the biology of the spread of residual visceral cancer and has per-

mitted objective observations of the limitations of conventional primary operations as currently done.¹

In the main, second-look operations have been done on patients who had gastric, colic, or rectal cancers with lymph node metastases, although the method has also been applied to a group of miscellaneous malignancies. Approximately six months after the original excision and while asymptomatic without clinical evidence of residual cancer, the patients are re-operated upon. Any residual cancer found is removed. If cancer is found at this second-look operation, subsequent exploratory operations, called third, fourth, etc. looks are carried out at similar intervals of time until no cancer is found. Once a patient has undergone a negative exploration (with negative histological study of tissues removed) no more surgery has been recommended unless clinical evidence of a recurrence became apparent.

Initially in the study second-look operations were done for some patients with quite well localized cancers without extension to the lymph nodes. As the study progressed it was found that an extensive primary operation usually had been adequate for this group. However, some lymph node-negative patients with extension beyond the host organ to adjacent organs and tissues ("limited intra-peritoneal carcinosis") and some patients with symptomatic advanced carcinosis continue to be candidates for the method.^{9, 10} Patients whose cancer has metastasized to the regional lymph nodes, making up approximately two-thirds of any group of patients with resectable visceral cancers, offer the greatest challenge to the second-look method.

At the time of re-exploration, systematic examination of the entire abdominal cavity and the contained viscera is performed. This has included an examination of both the intra-peritoneal and extra-peritoneal areas in so far as is possible. All resectable suspicious lesions have been removed in an attempt to cure. Non-resectable residual lesions have been biopsied for histologic confirmation. A detailed identifica-

*Sincere thanks are expressed to the Damon Runyon Memorial Fund for Cancer Research and the Minnesota Division of the American Cancer Society for generous and continued support of the Second Look Studies.

tion and tabulation as to location of the specimen by the surgeon and the pathologist has been made; the specimens for histologic study have been meticulously examined using multiple and in some cases serial sections. It has been common to study as many as thirty specimens from a single case.* Because false negatives can occur either by failure of the surgeon to recognize residual cancer or through the failure of the pathologist to find small areas of cancer in tissues removed, every effort has been made to do the re-operations thoroughly removing if possible all suspicious tissues. During the study, considerable information has been gained concerning the rate of growth of residual visceral cancer. Although it is still difficult to tell the exact interval of time to allow between operations we have come to use somewhat shorter intervals in the cases of gastric cancer than in the cases with carcinoma of the colon, favoring an interval of slightly less than 6 months for the former and a somewhat larger interval, up to 8 months, for the latter.

RESULTS

At the present time 124 patients who had lymph node-positive cancer of the stomach, rectum or colon have received 175 second-look operations. Of the total group, 61 patients were negative and 63 were positive at the time of the first second-look. In all, 8 patients have come to a final negative look (histologically confirmed); a salvage rate of 12.7% of patients with hithertofore hopeless residual cancer. There are at present 6 patients awaiting another look who had readily resectable residuals at the time of the first re-exploration.

There have been no operative deaths among the patients who had negative explorations. The operative mortality (patient) has been 5.6% or 4.0% based on the number of operations done. The

*Thanks are acknowledged to Drs. Paul H. Lober and Robert Hebbel, of the Department of Pathology, who have given help to this program.

operative mortality has been related to very aggressive attempts to extirpate totally extensive residuals involving multiple tissues and organs.

CANCER OF THE STOMACH

A tabulation of the results of re-operation for patients with carcinoma of the stomach is found in Table I. Results thus far in this group have not been highly favorable although one success among patients with a disease as fatal as residual cancer of the stomach is somewhat encouraging (Case No. 1). It appears that at least one additional patient is now on the road to a final negative look after his fourth operation (Case No. 2). Another patient is awaiting a third look after having had a favorable second look (Case No. 3).

The second-look operations have offered a unique opportunity to study the nature and location of the spread of asymptomatic cancer following gastrectomy.¹ A by-product of these operations has been the detailed study of the location and pathologic nature of early recurrences or residuals found after primary procedures. A brief summary of the results of this study and its clinical applications to primary operations for gastric cancer is contained herein.

Of 38 positive look operations for 26 patients with residual gastric cancer, the location of residual cancer could be anatomically identified and confirmed by histologic study at 30 operations. At 8 operations the metastases were diffuse (peritoneal seeding and multiple metastases to the liver) and no detailed tabulation of the site was made.

At 15 of the 30 positive look operations cancer was found within the lymph nodes, fibrous tissue or fat of the hepatic pedicle (nodes and channels of the ascending hepatic artery, portal vein, common bile duct, and cystic duct.) Residual cancer was found in the retropancreaticoduodenal areas (superior or posterior retropancreaticoduodenal nodes) in 6 of the 30 operations.

TABLE I

CANCER OF THE STOMACH

Reoperations on 42 Patients with Positive Lymph Nodes
(59 Operations)

Cancer Found at Second Look, 25 Patients, 38 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well: Last look negative	1	61 (47 mos. since neg. look)
Living and well: Awaiting another look	2	10, 20
Living with residual	--	-----
Dead of cancer	20	Range: 6-34 Average: 16
Dead (other than cancer)	--	-----
Operative deaths	2	23, 28

No Cancer Found at Second Look, 17 Patients, 21 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well	11	Range: 22-98 Average: 54
Living with residual	1	55
Dead of cancer	5	11, 36, 48*, 51*, 52
Dead (other than cancer)	--	-----
Operative deaths	--	-----

*Although the first 'second look' was negative, a positive look followed.

Status as of April 1, 1955

The regular use of splenectomy to remove the regional lymphatics of the splenic pedicle; dissection of the juxtacardiac lymph nodes; and dissection of the splenic artery, celiac axis and the aorta have been standard procedures in this clinic for several years.^{4,6,8}

The implications of the second-look findings upon the plan of the primary operation for gastric cancer is apparent. The plan of initial operations has been altered to include a thorough lymphatic dissection of the hepatic pedicle and retropancreaticoduodenal lymphatics overlying the vena cava.

Eleven of 24 specimens from operations done by this extended plan showed microscopic metastases to the lymph nodes of the hepatic pedicle or within the area from the superior border of the duodenum to the hilus of the liver. In the main these have been in lymph nodes to the left of the common bile duct, adjacent to the ascending portion of the hepatic artery or portal vein. However, instances of involvement of the peribiliary lymphatics have occurred. There were four specimens that contained cancer within lymph nodes from the retropancreaticoduodenal area, most likely within the superior nodes of this group.^{1*}

The influence of the second-look study upon the plan of primary operation is an important additional aspect of this program.

CANCER OF THE RECTUM

In this group there have been 2 patients who have apparently been successfully treated and have come to a final negative look, (Case reports No. 4 & 5).

*Data from "Studies in the Spread and Operative Management of Cancer of the Stomach," thesis to be submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Surgery, Stuart W. Arhelger; included with permission of the Graduate School, University of Minnesota.

In both of these cases residual cancer was found in lymph nodes at a second-look procedure carried out about six months after a combined abdominoperineal operation. Resection of the residual cancer was accomplished at the second-look and no cancer was detected at a third-look operation carried out at a later date. The results in the group of patients with cancer of the rectum are shown in Table II.

Early in the study of residual cancer found at second-look operations for cancer of the rectum, involvement of lymph nodes along the aorta and vena cava appeared to be the most common site of residual. Residual cancer located here was successfully removed. However, as the study has progressed residual cancer located deep in the pelvis especially in the perineural lymphatic tissues of the sacral plexus and the perineum has proved to be a particularly trying problem. Thus far, the presence of perineal and perisacral residuals has been the limiting factor in the ability to achieve more frequent success in this group of cases.

CANCER OF THE COLON

As reported previously this has been the most encouraging group. As is shown in Table III there were five patients among twenty-one found with residual cancer at the second-look operation who finally had a negative look. (Cases 6, 7, 8, 9, 10). In addition there are two patients who are living and well and who are awaiting another look. These two cases appear favorable as the residual cancer found at the second-look procedure was of a limited character and was easily removed. Until recently all of the patients in the colon group who were positive at their first exploration and who had been finally declared negative had continued to show no clinical evidence of residual cancer. Recently one patient of the five who had had negative last looks has been found to have an area of residual cancer in the para-vesical lymphatic tissues. Therefore an additional look was carried out and the previously undetected residual was excised (Case No. 10).

TABLE II

CANCER OF THE RECTUM

Reoperations on 40 Patients with Positive Lymph Nodes
(53 Operations)

Cancer Found at Second Look, 17 Patients, 25 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well: Last look negative	2	14, 37 (4 mos. and 20 mos. since neg. looks)
Living and well: Awaiting another look	1	3
Living with residual	1	33
Dead of cancer	12	Range: 10-53 Average: 20
Dead (other than cancer)	--	-----
Operative deaths	1	14

No Cancer Found at Second Look, 23 Patients, 28 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well	16*	Range: 2-66 Average: 39
Living with residual	--	-----
Dead of cancer	5	12, 20, 22, 32**, 59
Dead (other than cancer)	1	52
Operative deaths	1	40**

* One of these patients had an excision of a metastatic lung nodule in conjunction with a second negative abdominal exploration; 22 months have elapsed since last operation; the patient remains well.

** Although the first 'second look' was negative, a positive look followed.

Status as of April 1, 1955

TABLE III

CANCER OF THE COLON

Reoperations on 42 Patients with Positive Lymph Nodes
(63 Operations)

Cancer Found at Second Look, 21 Patients, 41 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well: Last look negative	4	53, 72, 75, 77 (44, 60, 56, & 50 mos. since negative looks)
Living and well: Awaiting another look	3	7, 11, 23*
Living with residual	3	12, 12, 21
Dead of cancer	7	Range; 13-24 Average: 20
Dead (other than cancer)	--	-----
Operative deaths	4	5, 12, 13, 23

*Had positive second and negative third look; subsequent residual noted and resected at fourth operation.

No Cancer Found at Second Look, 21 Patients, 22 Operations

Status	Number of Patients	Length of Follow-up After 1st Operation (Months)
Living and well: Last look negative	17	Range: 8-110 Average: 46
Living and well: Awaiting another look	1	19**
Living with residual	--	-----
Dead of cancer	1	27
Dead (other than cancer)	2	40, 40
Operative deaths	--	-----

** 'Second look' was negative; later residual noted and resected at third operation.

Status as of April 1, 1955

One patient found to be negative at the time of the first second-look exploration developed a small residual at the line of previous colo-colic anastomosis. This was resected at a third operation and a fourth, recently carried out, was negative.* It is probable that this interesting recurrence was the result of the local implantation of malignant cells at the suture line of the intestinal anastomosis.² In this instance it does not appear likely that this was due to inadequate excision, as the proximal and distal lines of resection were free of microscopically detectable cancer and more distant from the margin of the tumor than would be the usual limits of intramural retrograde extension. In order to prevent the presence of detached malignant cells in the lumen of the colon at the site of intestinal suture, Cole and his associates² have recommended ligation of the colon several inches above and below the tumor before the mobilization for resection is begun.

LIMITED INTRAPERITONEAL CARCINOSIS

The principle of multiple operations has been applied to some patients with known advanced intra-abdominal cancer, who presented obvious residuals by clinical or x-ray examinations.

These cases have been termed "limited abdominal carcinosis"^{9,10} to distinguish them from the asymptomatic lymph node positive group. The ultimate cure of such cases is uncommon. However, occasional final negative operations have been obtained. Case No. 11 has been chosen to illustrate this special group.

SUMMARY AND CONCLUSIONS

Despite efforts directed toward early diagnosis and the use of improved and more radical primary operations for visceral cancer, a large number of patients with metastasis to the regional lymph nodes are not cured by their ini-

*Fourth operation on May 17, 1955; case listed in Table III as awaiting another look.

tial procedure. The use of secondary or multiple operations is an attempt to achieve some success among these more advanced cases. This is a clinical experiment guided by the known lack of success in single extensive extirpations in patients with metastatic cancer in lymph nodes.

Although the period of study and observation is insufficient to determine statistically the accomplishment regarding the prolongation of life and cure rates, it seems clear that through the use of these methods the prognosis of some patients suffering from hitherto undetected, fatal, residual cancer can be favorably altered. Success has occurred most often in the management of colic cancer. Occasional success has been achieved in patients with residual cancers of the stomach or rectum, and it has been heartening to gain final negative looks even in some patients with limited intraperitoneal carcinosis.

Although there has been ample autopsy study of recurrency material from cases of late, advanced, visceral cancer, studies of the behavior of early residual cancer are lacking. An important facet of the second-look study has been the valuable pathologic information obtained relating to the nature of early residual cancer and the unprecedented opportunity for objective observation of the effects and limitations of various primary procedures.

This has led to changes in the plan of current initial procedures for cancer of the stomach.

The second-look study and auxiliary pathologic data obtained are now serving as additional guides for more adequate and precise approaches to the surgical management of abdominal cancer.

CASE REPORTS

Cancer of the Stomach

Case No. 1

A 55-year old woman underwent a gastric

resection in March, 1950, for an obstructive cancer of the gastric antrum. Because the cancer was adherent to the body of the pancreas and the mesocolon, the mesocolon and a portion of the pancreas were removed with the stomach. Microscopic examination revealed that the pancreas was not actually invaded by tumor, though several lymph nodes contained carcinoma.

Four months after the original operation a second-look was done. At this time she had neither symptoms nor clinical evidence suggestive of residual cancer, yet a grossly and microscopically involved lymph node adherent to the hepatic artery was found and excised. Her recovery from this operation was rapid, and she was apparently in good health when admitted for a third look operation six months after the second. Further metastatic cancer was found in two lymph nodes, one adherent to the hepatic artery and the other near the upper part of the celiac axis.

She returned for one more operation, the 4th after an interval of 4 months. Again a careful search was made throughout the abdomen, but the only tissue suggestive of metastatic cancer that could be found was a firm nodule adherent to the celiac axis. Since this nodule could not be separated from the vessel, the celiac axis was resected with it. The remaining lymph node bearing tissues in the upper abdomen (adjacent to the portal vein, aorta, and vena cava) were removed. A painstaking pathologic search, including examination of serial sections of the nodule taken with the celiac axis, disclosed no cancer in any of the excised tissues.

The patient is well and apparently free of cancer five years following the original gastric resection (45 months since the negative look).

Case No. 2

In July, 1953, this 64-year old man had a total gastrectomy for an ulcerative carcinoma of the stomach with spread to

the lymph nodes. He was asymptomatic five months later when a second-look operation was done. Exploration revealed residual cancer in the lymphatic bearing tissues of the hepatic pedicle and the upper portion of the retropancreaticoduodenal area. There were lymph nodes containing cancer in the area of the mid colic artery, and one cancerous nodule was present on the surface of the left lobe of the liver. All residuals were excised as widely as possible and lymphatic dissections of the hepatic pedicle, retropancreaticoduodenal area and the region of the origin of the superior mesenteric artery was done.

A third look was done about six months after the second-look operation. Recurrent cancer in the left lobe of the liver was removed by a near-total resection of this lobe.

In December, 1954, a fourth look operation was done. A small cancerous nodule on the surface of the pancreas was excised and multiple biopsies taken. The liver had apparently remained free of recurrence (histologic study of biopsies from the line of resection were negative). He is now awaiting another exploration.

Case No. 3

This 64-year old woman had a subtotal gastrectomy with an extended lymphatic dissection in June, 1954, for a large ulcerative carcinoma in the distal one-half of the stomach. Study of the resected specimen showed widespread metastases to the regional lymph nodes of the hepatic pedicle and suprapancreatic areas as well as groups of the lesser and greater gastric curvatures.

Six months later, in December, 1954, a second-look operation was done. Thorough examination including sampling of tissues from the areas of the lymphatic dissection revealed only one residual, a nodule on the surface of the pancreas. The pancreas was transected about 2 cm. distal to the inner curve of the duodenum and removed; a dissection of the upper portion of the superior mesenteric vein

and the origin of the superior mesenteric artery was carried out.

The patient has continued to be asymptomatic. A further exploration is planned.

Comment: This case is particularly interesting because of the favorable second-look that followed primary dissection of an extensive carcinomatous involvement of the hepatic pedicle and suprapancreatic areas.

Cancer of the Rectum

Case No. 4

This 64-year old woman underwent an abdominal-perineal resection for carcinoma of the rectum in March, 1952. Direct extension of the tumor to surrounding fat as well as lymph nodes was found.

She was asymptomatic when admitted for a second-look operation five months later. Although grossly negative for recurrence, many biopsies were taken at laparotomy. Initial histologic studies were negative but serial sections revealed cancer in two lymph nodes.

A third look operation was done 11 months after the second-look. Sixteen questionable areas were excised; all were negative for metastatic cancer. It is now 32 months after the positive second-look and 20 months since the final negative operation. She remains free of symptoms and in good health.

Case No. 5

In January, 1954, this 30-year old woman had a combined abdominal-perineal resection for a cancer of the rectum with positive lymph nodes. She had neither signs nor symptoms suggestive of recurrent cancer when a second-look operation was done in July, 1954. In the pelvis, in the region of the branches of the left hypogastric artery a firm nodule 3 cm. in diameter was found and widely excised along with the paravascular lymphatic bearing tissues. Micro-

scopic examination showed residual tumor to be present only in this one area.

Five months later a third-look operation was done. The exploration was negative grossly and microscopically for residual cancer. It is now five months since the last look. She has no clinical signs of residual cancer and seems to be doing well.

Cancer of the Colon

Case No. 6

This 60-year woman had a carcinoma of the cecum with metastases to regional lymph nodes removed in November, 1948. Five months later, while asymptomatic, she was readmitted for a second-look operation. An enlarged lymph node, located at the root of the small bowel mesentery just over the aorta, was removed. Microscopic examination of the node showed it to contain metastatic cancer.

The patient had no signs or symptoms of residual tumor when she returned for a third-look operation in July, 1949. Recurrent cancer was found to be present in a nodule removed from the periaortic region just cephalad to the previously excised residual.

At the 4th look operation in January, 1950, two nodules removed from the left periaortic area were found to contain metastatic adenocarcinoma. No other evidence of recurrence was found.

At the 5th operation, 9 months after the 4th, an extensive excision of the retroperitoneal tissues adjacent to the upper abdominal aorta and vena cava was done. Microscopic examination of this tissue revealed carcinoma in a node located behind the second portion of the duodenum and over the aorta.

The 6th look, which was done 5 months later in February, 1951, was a careful general exploration of the abdomen with excision of a large amount of lymphatic-bearing tissues from the upper abdomen, the only area in which lymph node exci-

sions had not been previously done. No evidence of residual cancer was found.

Case No. 7

This 52-year old woman had a carcinoma involving the sigmoid colon with extension to the regional lymph nodes and ileum removed by a left colectomy in March, 1949. Fifty cm. of ileum were resected with the specimen en-bloc; intestinal continuity was established by primary entero-enterotomy and a colo-proctostomy.

Microscopic examination showed involvement of one regional lymph node and an extension of malignant cells along a fistulous tract, between the ileum and colon.

She was readmitted, without signs or symptoms of recurrent cancer, in September, 1949, for a second-look operation. Residual was found involving the left cornu of the uterus and extending to a loop of ileum. En-bloc excision, hysterectomy and resection of a segment of ileum was performed. Histologic examination of the specimen showed carcinoma involving the uterus and the ileum.

A third-look operation, done seven months after the second, showed no evidence of residual cancer. Since her discharge from the hospital, the patient has remained well. More than five years have now elapsed since the last positive resection.

Case No. 8

In January, 1949, this 62-year old man had a resection of a carcinoma of the sigmoid colon. Because there appeared to be extensive lymph node metastases to the mesentery of the sigmoid and the small bowel; the resection was thought to be of a palliative rather than curative character.

Surprisingly, he remained free of signs and symptoms suggestive of recurrence. In February, 1950, 13 months after the first operation, a second-look operation was done. Abdominal explora-

tion disclosed several nodules along the periaortic lymph node chain. These were excised and one was found to contain metastatic cancer.

Six months later, still entirely asymptomatic, he was admitted for a third look. A thorough exploration of the abdomen revealed no evidence of residual cancer. When last examined in the outpatient clinic, 55 months after the negative exploration, he was asymptomatic and clinically free of disease.

Case No. 9

A 42-year old man had a carcinoma of the cecum with regional node metastases resected by right hemicolectomy with ileotransverse colostomy at another hospital in October, 1951. A fecal fistula developed during the postoperative period and drained intermittently. However, he appeared to be clinically free of cancer when admitted for a second-look operation and management of his fecal fistula in January, 1952.

A thorough abdominal exploration disclosed narrowing at the anastomotic area, a fistula originating from that area, and no gross evidence of residual tumor. The area of the anastomosis and the fecal fistula were excised en masse with additional ileum, transverse colon, mesentery, and omentum. Ileocolostomy was performed. Microscopic examination revealed residual carcinoma within the omentum.

A third look, done six months later while he remained asymptomatic, showed no evidence of residual cancer. He has been now followed 4 years in the outpatient clinic and is doing well.

Case No. 10

A 65-year old woman had a carcinoma of the sigmoid with metastases to mesenteric lymph nodes resected by partial left colectomy in April, 1953.

Nine months later a second look operation revealed a nodule in the rectovaginal septum adjacent to the cervix.

A radical hysterectomy and a pelvic lymph node dissection were performed. Examination after removal indicated carcinomatous involvement of the nodule. Following the second-look, she remained free of symptoms suggestive of recurrence, and a third-look operation was done six months later. Careful exploration of the abdomen and pelvis, including several biopsies, revealed no evidence of residual cancer. However, when seen in the clinic in December, 1954, (six months following the third look), pelvic examination showed a suggestion of a perivesical mass. Somewhat discouraged at the prospect of recurrence after a negative second look, it was not until February, 1955, when she consented to another exploration. A fourth-look disclosed nodules adjacent to the ureterovesical junctions; all detectable recurrences were removed. Microscopic examination confirmed the presence of metastatic carcinoma in the resected nodules.

Since discharge from the hospital, she has been followed for only two months. It is anticipated that she will return for a fifth-look about six months after the last operation.

Intraperitoneal Carcinosis

Case No. 11

In July, 1952, this 52-year old woman underwent resection of a huge carcinoma of the descending colon with extension and perforation to parietal peritoneum and abdominal wall with abscess formation. There were several carcinomatous implants in the wall of the colon, although no definite metastases to lymph nodes were found. All visible cancer was resected, including most of the colon, a portion of the abdominal wall, and the abscess en bloc.

A second-look operation was done six months later. Residual tumor was found in the abdominal wall and was excised.

Six months later a third laparotomy included abdominal exploration and numerous biopsies. Tumor present in the

perirenal fat of the left kidney was removed by stripping the kidney and its pedicle of fat and fibrous tissue.

A fourth-look, six months following the third-look operation, disclosed no gross or microscopic evidences of cancer. Twenty months after the last known residual tumor was excised, she is free of sign of recurrence.

REFERENCES

1. Arhelger, S. W., Lober, P. H., and Wangensteen, O. H.
Dissection of the hepatic pedicle and the retropancreaticoduodenal areas for cancer of the stomach
Surgery (to be published).
2. Cole, W. H., Packard, D., and Southwick, H. W.
Carcinoma of the colon with special reference to prevention of recurrence
J.A.M.A., 155:1549-1553, 1954.
3. Lewis, F. J., and Wangensteen, O.H.
Explorations following resection of the colon, rectum, or stomach for carcinoma with lymph node metastases
Surgical Forum, 1950, Pp. 535-540, American College of Surgeons, Philadelphia W. B. Saunders Co., 1951.
4. Wangensteen, O. H.
The problem of gastric cancer
J.A.M.A., 134:1161-1169, 1947.
5. Idem.
Cancer of the colon and rectum with special reference to (1) earlier recognition of alimentary tract malignancy; (2) secondary delayed re-entry of the abdomen in patients exhibiting lymph node involvement; (3) subtotal excision of the colon; (4) operation in obstruction.
Wisconsin M.J., 48:591-597, 1949.
6. Idem.
The Surgeon's Approach to the problem of alimentary tract malignancy
J. Lancet. 70:411-420, 1950.

7. Idem
Further experience concerning the principle of the "second-look" procedure in alimentary tract cancer
Discussion before American Surgical Association, 1950, Ann. Surg., 132: 561, 1950.
8. Idem
Cancer of the esophagus and the stomach
American Cancer Society Monograph, 1951.
9. Idem
Surgery as a suppressive measure in cancer
Discussion before American Surgical Association, 1951. Ann. Surg., 134:526, 1951.
10. Wangensteen, O. H., Lewis, F. J., Arhelger, S. W., Muller, J. J., and MacLean, L. D.
An interim report upon the "second-look" procedure for cancer of the stomach, colon, and rectum and for "limited intraperitoneal carcinoma"
Surg., Gynec. & Obst., 99:257-267, 1954.
11. Wangensteen, O. H., Lewis, F. J., and Tongen, L. A.
The "second-look" in cancer surgery
J. Lancet, 71:303-307, 1951.

II. MEDICAL SCHOOL NEWS

Minnesota Medical Foundation Luncheon

The Minnesota Medical Foundation held its annual luncheon on Monday, May 23, in the Junior Ballroom of the Radisson Hotel in conjunction with the annual meeting of the Minnesota State Medical Association. More than 80 guests attended the luncheon. Dr. Wesley W. Spink, the Foundation's President, gave a brief description of the recent activities of the Foundation, and Dr. Robert B. Howard, Secretary-Treasurer, reported on membership. Featured speaker was Dr. Cecil J. Watson, Professor and Head, Department of Medicine, University of Minnesota Medical School, who delivered a most stimulating talk entitled "A Middle East Medical Journey."

* * *

Mr. Amberg Honored

Congratulations are in order to Mr. Ray Amberg, Director of the University of Minnesota Hospitals, who was recently named recipient of the Francis E. Harrington Award for outstanding contributions in the field of public health. The award, made by the Junior Chamber of Commerce, is named after Dr. F. E. Harrington, Minneapolis Commissioner of Public Health from 1920 to 1944.

* * *

Faculty News

The recent meetings of the American Society for Clinical Investigation and the Association of American Physicians which were held in Atlantic City from May 2 to 4 attracted the following members of the Department of Medicine: Doctors C. J. Watson, Wesley W. Spink, James B. Carey, Paul Frick, Robert I. Wise, Fouad Bashour, B. J. Kennedy, Louis Tobian, Robert S. Abernathy, Edmund B. Flink, Wendell Hall, and Frederick Goetz.

Dr. Cecil J. Watson, Professor and Head, Department of Medicine, attended the meeting of the Committee of Medicine and Surgery of the National Research Council which was held on May 16 in Washington, D. C. The Department of Medicine was recently host to Dr. K. Stuart Hetzel, Dean of the Medical School at Adelaide, South Australia.

Dr. F. H. Van Bergen, Associate Professor and Director, Division of Anesthesiology, was guest speaker at the 27th Annual May Clinic of the Ingham County Medical Society, Lansing, Michigan, on May 5. He spoke on "Anesthetic Management in Acute Emergency Situations." The Division of Anesthesiology had three distinguished visitors recently: Dr. C. G. Lynch, Chief of Anesthesiology, Veterans Administration Hospital, Richmond, Virginia; Dr. H. M. Slater, Director of Anesthesia, Children's Memorial Hospital, Montreal, Quebec; and Dr. Francis Faldes, Chief of Anesthesiology, Mercy Hospital, Pittsburg, Pennsylvania.

Dr. Reynold A. Jensen, Professor of Pediatrics and Psychiatry, attended the Annual Meeting of the American Psychiatric Association at Atlantic City from May 9 through 13 where he moderated a round table discussion on the subject of the professional problems in the training of the child psychiatrist.

III.

UNIVERSITY OF MINNESOTA MEDICAL SCHOOL
WEEKLY CALENDAR OF EVENTS

Physicians Welcome

May 30 - June 4, 1955

Monday, May 30 (HOLIDAY)

Tuesday, May 31

Medical School and University Hospitals

- 9:00 - 9:50 Roentgenology-Pediatric Conference; Samuel Feinberg, John A. Anderson and Staffs, Eustis Amphitheater, U. H.
- 12:30 - 1:20 Pathology Conference; Autopsies; J. R. Dawson and Staff; 104 Jackson Hall.
- 12:30 - Bacteriology and Immunology Seminar; Enhancement of Experimental Mycoses by Roentgen Radiation and Cortisone; Frank Roth; 1050 Mayo Memorial.
- 12:30 - Anatomy Seminar; Effects of Bacterial Endotoxins on Resistance to Infection and Immune Response; Richard Condie; 226 Jackson Hall.
- 3:30 - General Physiology Seminar; 323 Zoology Building.
- 3:30 - Pediatric Seminar; Suicidal Threats and Risks in Childhood and Adolescence; Dr. Engstrom; 1450 Mayo Memorial.
- 4:00 - 5:00 Pediatric Rounds on Wards; John A. Anderson and Staff; U. H.
- 4:00 - 5:00 Physiology-Surgery Conference; Todd Amphitheater, U. H.
- 4:30 - 5:30 Clinical-Medical-Pathological Conference; Todd Amphitheater, U. H.
- 5:00 - 6:00 X-ray Conference; Presentation of Cases from Minneapolis General Hospital; Drs. Lipschultz and Puello; Eustis Amphitheater, U. H.

Ancker Hospital

- 8:00 - 9:00 Pediatric Rounds; Dale Cumming; Contagion 1.
- 9:00 - 10:30 Visiting Staff Rounds.
- 9:00 - 12:00 Practical Diagnostic Clinic; Harry Orme; Out-Patient Department.
- 11:00 - 12:00 Medical X-ray Conference; J. R. Aurelius; Auditorium.
- 2:30 - 4:00 Routine EKG Interpretations; Resident Staff.
- 4:00 - 5:00 Medical-Pathological Conference; W. F. Mazzitello, Auditorium.

Minneapolis General Hospital

- 9:30 - Pediatric Rounds; Elizabeth Lowry and A. Bridge; Station 5.
- 10:00 - Psychiatry Grand Rounds; R. W. Anderson, Station 3.
- 12:30 - 2:30 Dermatology Rounds on Clinic; Carl W. Laymon and Staff.
- 1:00 - Tumor Clinic; Drs. Eder, Coe, and Lipschultz; Classroom.

Tuesday, May 31 (Cont.)

Veterans Administration Hospital

- 7:30 - Anesthesiology Conference; Surgical Conference Room, Bldg. 43.
8:30 - Surgery Journal Club; Conference Room, Bldg. I.
9:30 - Surgery-Pathology Conference; Conference Room, Bldg. I.
10:30 - Surgery-Tumor Conference; D. Ferguson and J. Jorgens.
1:00 - Review of Non-TBC Chest Pathology Conference; E. T. Bell; Conference Room, Bldg. I.
2:00 - Combined Medical-Surgical Chest Conference; Conference Room, Bldg. I.
2:00 - 2:50 Dermatology and Syphilology Conference; H. E. Michelson and Staff; Bldg. III.
4:00 - Thoracic Surgical Problems; Conference Room, Bldg. I.
5:30 - Physiology Seminar; Surgical Conference Room, Bldg. 43.

Wednesday, June 1

Medical School and University Hospitals

- 11:00 - 12:00 Pathology-Medicine-Surgery-Pediatrics Conference; Todd Amphitheater, U. H.
12:30 - 1:30 Radioisotope Seminar; Betatron Room in Cobalt Underground Section, U.H.
1:00 - 2:00 Dermatology Clinical Seminar; F. W. Lynch; 300 North Clinic.
1:30 - 3:00 Pediatrics Allergy Clinic; Albert V. Stoesser and Lloyd Nelson; W-211, U. H.
3:30 - 4:30 Dermatology-Pharmacology Seminar; 3rd Floor Conference Room, Heart Hospital.
4:30 - 5:50 Dermatology-Infectious Disease Seminar; 3rd Floor, Conference Room, Heart Hospital.
5:00 - 6:00 Radiology Residents' Lecture Retrospectroscope; Leo G. Rigler; Todd Amphitheater, U. H.
5:00 - 5:50 Urological-Pathological Conference; C. D. Creevy and Staff; A503, Mayo Memorial.
5:30 - 7:30 Dermatology Journal Club and Discussion Group; Hospital Dining Room.
7:30 - 9:30 Dermatology Seminar; Review of Interesting Slides of the Week; Robert W. Goltz; Todd Amphitheater, U. H.

Ancker Hospital

- 8:30 - 9:30 Clinico-Pathological Conference; J. Noble; Auditorium.
11:00 - 12:00 Pediatric and Contagion Rounds; Harry Orme; Contagion 1.
11:00 - 12:00 Medicine Resident Rounds; W. F. Mazzitello.
3:00 - 5:00 Infectious Disease Rounds; Auditorium.

Wednesday, June 1 (Cont.)

Minneapolis General Hospital

- 10:30 - 12:00 Medicine Rounds; Thomas Lowry and Staff; Station 31.
- 11:00 - Pediatric Rounds; Erling Platou and Richard Raile; Station 6.
- 12:00 - Surgery Seminar; O. J. Campbell; Classroom.
- 12:30 - Pediatrics Staff Meeting; Classroom, Station 4.

Veterans Administration Hospital

- 8:30 - 10:00 Orthopedic X-ray Conference; E. T. Evans and Staff; Surgical Conference Room, Bldg. 43.
- 8:30 - 12:00 Neurology Rehabilitation and Case Conference; A. B. Baker.
- 9:00 - Gastro-Intestinal Rounds; Drs. Wilson, Zieve, Ferguson, Brakel, Vennes, Nesbitt and Sadoff.
- 10:30 - Psychosomatic Conference; C. K. Aldrich; 7th Floor, Bldg. 43.
- 12:30 - Medical Journal Club; Doctors' Dining Room.
- 12:30 - X-ray Conference; J. Jorgens; Conference Room, Bldg. I.
- 1:30 - 3:00 Metabolic Disease Conference; Drs. Flink and Shapiro.
- 3:30 - Urology Pathology Slide Conference; Dr. Gleason; Conference Room, Bldg. I.
- 7:00 - Lectures in Basic Science of Orthopedics; Conference Room, Bldg. I.

Thursday, June 2

Medical School and University Hospitals

- 9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; Room 3.148 Mayo Memorial.
- 11:00 - 12:00 Cancer Clinic; K. Stenstrom, B. Zimmermann; Todd Amphitheater, U. H.
- 12:30 - 1:30 Physiology Seminar 210; Transport; Selected Topics in Advanced Permeability; Nathan Lifson; 214 Millard Hall.
- 1:30 - 4:00 Cardiology X-ray Conference; Heart Hospital Theatre.
- 4:00 - 5:00 Anesthesiology Seminar; F. H. Van Bergen and Staff; Room 100, Mayo Memorial.
- 5:00 - 6:00 Radiology Seminar; Intravenous Cholangiography; Robert Kurth, Eustis Amphitheater, U. H.
- 7:30 - 9:30 Physiology 211 Seminar; Selected Topics in Heart and Circulation; Hemodynamics; M. B. Visscher and Robert Evans; 271 Lyon Laboratories.

Ancker Hospital

- 9:00 - 10:00 Pediatric Contagion Rounds; Alexander Stewart, Contagion 5.
- 9:30 - 10:30 Medical Grand Rounds; Auditorium; Visiting Staff Rounds immediately following Grand Rounds.
- 11:00 - 12:00 Medicine Resident Rounds; W. F. Mazzitello.
- 2:00 - 3:00 Routine ECG Interpretation; Ben Sommers; Medical Record Library.

Thursday, June 2 (Cont.)

Minneapolis General Hospital

- 9:30 - Neurology Rounds; Heinz Bruhl; Station 4.
- 10:00 - Psychiatry Grand Rounds; R. W. Anderson and Staff; Station 3.
- 11:30 - 12:30 Clinical Pathological Conference; John I. Coe; Classroom.
- 12:30 - 2:30 Dermatology Rounds and Clinic; Carl W. Laymon and Staff.
- 1:00 - Fracture X-ray Conference; Drs. Campbell and Moe; Classroom.

Veterans Administration Hospital

- 8:00 - Experimental Surgery Laboratory Meeting; Conference Room, Bldg. I.
- 8:30 - Hematology Rounds; Drs. Hagen and Duryea.
- 9:00 - Surgery Grand Rounds; Conference Room, Bldg. I.
- 9:00 - Surgery Ward Rounds; D. Ferguson and Staff; Ward 11.
- 11:00 - Surgery-Roentgen Conference; J. Jorgens; Conference Room, Bldg. I.
- 1:00 - Infectious Disease Conference; Conference Room, Bldg. I. (Rounds immediately following conference).
- 4:00 - 5:00 Seminar on Radioisotopes in Medicine; Biochemical Applications of Radioisotopes - Examples; Conference Room, Bldg. I.

Friday, June 3

Medical School and University Hospitals

- 8:00 - 10:00 Neurology Grand Rounds; A. B. Baker and Staff; Station 50, U. H.
- 9:00 - 9:50 Medicine Grand Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.
- 10:30 - 11:50 Medicine Rounds; C. J. Watson and Staff; Todd Amphitheater, U. H.
- 11:00 - 12:00 Vascular Rounds; Davitt Felder and Staff Members from the Departments of Medicine, Surgery, Physical Medicine, and Dermatology; Eustis Amphitheater, U. H.
- 11:45 - 12:50 University of Minnesota Hospitals Medical Staff Meeting; Elbow Fractures in Children; Sheldon Lagaard; Powell Hall Amphitheater.
- 1:00 - 2:50 Neurosurgery-Roentgenology Conference; W. T. Peyton, Harold O. Peterson and Staff; Todd Amphitheater, U. H.
- 1:00 - 2:00 Physiology Seminar 212; Selected Topics in Respiration: Respiratory and Circulatory Effects of Hypothermia; E. B. Brown; 214 Millard Hall.
- 1:30 - 2:30 Dermatology Grand Rounds; Presentation of Cases from Grouped Hospitals (University, Ancker, General and Veterans) and Private Offices; H. E. Michelson and Staff; Eustis Amphitheater, U. H.
- 2:30 - 4:00 Dermatology Hospital Rounds; H. E. Michelson and Staff; Begin at Dermatological Histopathology Room, C-394 Mayo Memorial.
- 3:00 - 4:00 Neuropathological Conference; F. Tichy; Todd Amphitheater, U. H.
- 3:30 - 4:30 Dermatology-Physiology Seminar; 3rd Floor Conference Room, Heart Hospital.

Friday, June 3 (Cont.)

Medical School and University Hospitals (Cont.)

- 4:00 - 5:30 Chest X-ray Conference; Chest Staff and Charles Nice; Todd Amphitheater, U. H.
4:30 - 5:20 Ophthalmology Ward Rounds; Erling W. Hanson and Staff; E-534, U. H.
5:00 - Urological Seminar and X-ray Conference; A-503, Mayo Memorial.

Ancker Hospital

- 8:00 - 9:00 Pediatric Rounds; Charles Steinberg, Contagion 1.
10:30 - 11:30 Pediatric Contagion Rounds; Richard Smith; Contagion 1.
11:00 - 12:00 Contagion Rounds; Harry Orme; Contagion 5.
2:00 - 3:00 Routine EKG Interpretation; Resident Staff.
3:00 - 4:00 Medical-Surgical-Pathological Conference; Auditorium.
4:00 - 5:00 Medical Journal Club; Conference Room, E5.
4:00 - 5:00 X-ray Surgery Conference; Auditorium.

Minneapolis General Hospital

- 10:00 - Otolaryngology Conference; Robert A. Priest, Large Classroom.
10:30 - Pediatric Surgical Conference; Tague Chisholm and B. Spencer; Classroom, Station 4.
12:00 - Surgery-Pathology Conference; Drs. Campbell and Coe; Classroom.
1:00 - 2:00 ECG Conference; Boyd Thomes and Staff; Classroom, Station 4.
2:00 - 4:00 Clinical-Medical Conference; Thomas Lowry; Classroom, Station 8.

Veterans Administration Hospital

- 10:30 - 11:20 Medicine Grand Rounds; Conference Room, Bldg. I.
11:00 - 12:30 Psychiatry Case Conference; Werner Simon; Psychiatry Department; VA Hospital Annex.
12:30 - Urology X-ray Conference; X-ray Department.
1:00 - CPC Conference; Conference Room, Bldg. I.
2:00 - Pathology Slide Conference; E. T. Bell; Conference Room, Bldg. I.

Saturday, June 4

Medical School and University Hospitals

- 7:45 - 8:50 Orthopedic X-ray Conference; W. H. Cole and Staff; M-109, U. H.
9:00 - 9:30 Pediatric Grand Rounds; Eustis Amphitheater, U. H.
9:00 - 11:50 Medicine Ward Rounds; C. J. Watson and Staff; Heart Hospital Amphitheater.

Saturday, June 4 (Cont.)

Medical School and University Hospitals (Cont.)

- 9:15 - 10:00 Surgery-Roentgenology Conference; Alexander R. Margulis, Owen H. Wangenstein and Staff; Todd Amphitheater, U. H.
- 10:00 - 11:30 Surgery Conference; Todd Amphitheater, U. H.
- 10:00 - 12:50 Obstetrics and Gynecology Rounds; J. L. McKelvey and Staff; Station 44, U. H.
- 10:00 - 12:00 Otolaryngology Seminar on Current Literature; L. R. Boies and Staff; Todd Memorial Room, A-675 Mayo Memorial.

Ancker Hospital

- 8:30 - 9:30 Surgery Conference; Auditorium.
- 9:30 - 11:00 Medicine Grand Ward Rounds; W. F. Mazzitello.
- 11:00 - 12:00 Medical Clerk Case Conference; W. F. Mazzitello.

Minneapolis General Hospital

- 8:00 - Urology Staff Conference; T. H. Sweetser; Main Classroom.
- 9:00 - Psychiatry Grand Rounds; R. W. Anderson; Station 3.
- 9:30 - Pediatrics Rounds on all Stations; R. B. Raile.
- 11:00 - 12:00 Medical X-ray Conference; O. Lipschultz, Thomas Lowry and Staff; Main Classroom.

Veterans Administration Hospital

- 8:00 - Proctology Rounds; W. C. Bernstein and Staff; Bldg. III.
- 8:30 - Medical X-ray Conference; Conference Room, Bldg. I.