

PRIMARY SARCOMA OF THE LARGE INTESTINE.*

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Statistics.—A somewhat careful survey of the material at my disposal shows a dearth of literature upon this subject until quite recently. According to Baltzer,¹ Stort found no cases in the reports of the Berlin Pathological Institute from 1859 to 1875. Undoubtedly many of the early cases were confused with other conditions and thus remained unrecognized.

Jopson and White,² in 1901 (*American Journal Medical Sciences*, v, 122), after a careful review, were able to find only 22 cases of sarcoma of the large intestine; and in 5 of these there was some doubt as to the growth being primary in the large bowel. In only 14 cases was the growth confined to the large bowel exclusively. Only 3 of this group were confined to the cæcum and ascending colon.

Location.—While in carcinoma of the intestine perhaps 95 per cent. occur in the large bowel, in sarcoma only about 35 per cent. are found there.

Corner and Fairbanks³ collected 175 cases of sarcoma of the alimentary tract (exclusive of the mouth, pharynx and anus), with the following distribution: Oesophagus, 14; stomach, 58; small intestine, 65; ileocæcal, 20; colon, 11; rectum, 7.

G. A. Hamann⁴ (*Surgery, Gynecology and Obstetrics*, September, 1909), in 1909, was able to find 4 additional cases.

We could only find 3 cases of sarcoma of the cæcum and ascending colon reported up to the time that I operated upon my case. The colon is most apt to be affected in childhood.

W. J. Mayo⁵ in 1909 reports resecting twice for sarcoma of the intestine, in a paper on "Tumors of the Cæcum."

S. Goto,⁶ in June, 1911, collected 24 cases of ileocæcal sarcoma, exclusive of those of the appendix, and gave 1 of his own. He gives 5

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cases reported by Nothnagel, 2 by Frank and 3 by Baillet, making 32 in all up to June, 1911, which is the last report I can find.

A. Baer¹ found 10 sarcomas in 124 inflammatory tumors of the ileocecal region.

Pathology—Microscopic.—Whereas all varieties are found, the most frequent type is the round cell; and perhaps the lymphosarcoma is second in frequency.

Jopson and White report only one spindle-cell tumor in the twenty cases where the type was known.

The tumor probably usually begins in the submucosa, and may be pedunculated, or may infiltrate the bowel wall, causing great thickening; but does not often involve the serosa. Tendency to stenosis is not marked; and, indeed, dilatation may occur. The growth has a tendency to develop longitudinally in the bowel wall, and has not the predilection for points of irritation which is so often manifest in carcinoma. The abdominal lymphatics are apt to be involved early and extensively, and metastasis here is most frequent. Perhaps the peritoneum is next. The actual diagnosis cannot be made except with a microscope.

Incidence of Sarcoma as Compared with Carcinoma.—These growths, while having much in common clinically, have many distinguishing features which are unlike; but a classification of symptoms which might point to more than a probable diagnosis is impossible.

Generally speaking, sarcoma appears in younger individuals, grows more rapidly, and is more apt to show tumor. Wasting and anæmia are more marked, and pain is out of proportion to obstructive symptoms. Early cachexia and less liability to stenosis and to hemorrhage, and perhaps irregular fever are the most distinguishing features of sarcoma.

Treatment.—Excision offers the only hope. Glandular involvement is no contra-indication. So far results have been discouraging.

Corner and Fairbanks' statistics show a mortality of 33 per cent. in 51 resections. Of 11 resections in the large intestine, 7 survived the operation. Fourteen of 22 cases

reported by Jopson and White were explored, and only 10 could be resected. Of these 5 died. Two cases of the 11 sarcomas of the colon were resected and both died.

Involved abdominal lymphatics should be looked for, and removed; and in cæcal growths the rule of excising at least six inches of the terminal ileum should be followed, as its lymphatic drainage is identical with that of the colon.

Report of Case.—Mr. A. S., aged sixty-one, had been under the care of Dr. L. A. Nippert for acute inflammatory symptoms relating to the right upper abdomen during the previous two weeks, during which time he was confined to bed. This was the first attack of this kind that he had ever had. He describes his previous attacks as follows:

For about twenty years, with gradually increasing frequency, he had had attacks of partial obstruction, and after severe pain, and often vomiting, he would take a laxative and finally be relieved. There had never been any bleeding, but the stool had been dark at various times. Microscopic examinations for blood, by various physicians, had proven negative. A year or two previously a small tumor had been removed from the face, and pronounced by Dr. Corbett, who examined the growth, to be adenoma.

The skin presented a marked icteric tinge which was thought to be due to the gall-bladder condition. Local examination showed much rigidity in the right upper quadrant; and on deeper inspection a mass could be palpated in the right kidney region. The urine showed albumen, granular and hyaline casts, and decrease in quantity.

Operation.—Operation revealed a distended gall-bladder, greatly thickened, which was quickly drained, as the intestinal tumor had been explored and found to be operable. A classical resection, with lateral anastomosis by the method of Moynihan, was made. Several large glands were lifted out, with the growth, after mobilizing the bowel after the method of Lane. Drainage was employed on account of the gall-bladder infection.

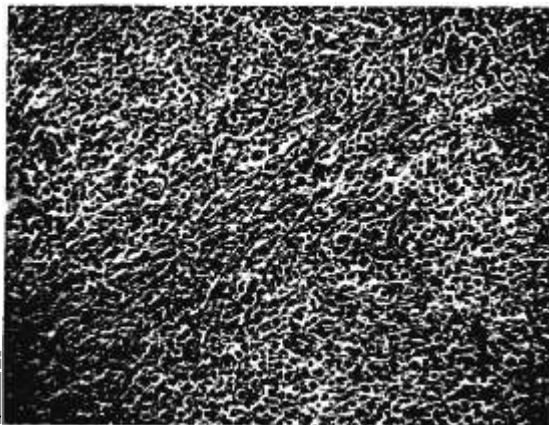
The output of urine was 32 ounces during the succeeding four days; but convalescence was otherwise normal. Since that time his health has been excellent.

FIG. 1.



Photograph of gross specimen sectioned longitudinally. The sharp limitations of the tumor, the nodular projecting masses, the thickened walls and the absence of ulceration are the prominent features.

FIG. 2.



Microphotograph, times 500. Shows a fine fibrillar net-work with numerous rounded and oval nuclei.

FIG. 3.



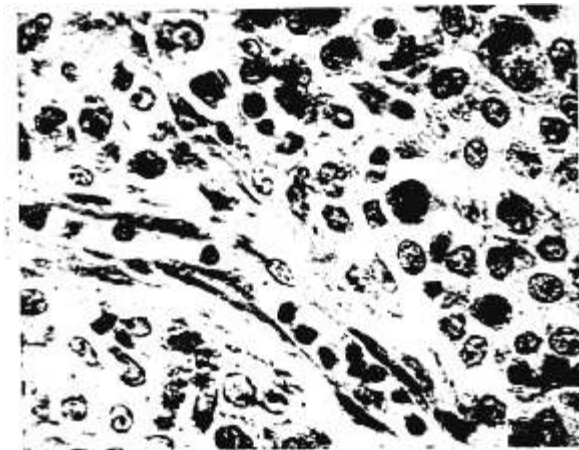
Microphotograph, times 500. Area showing numerous thin-walled vessels with slightly denser connective tissue bundles.

FIG. 4.



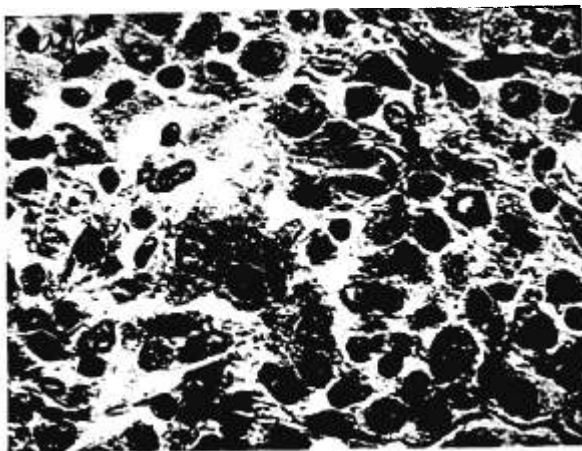
Microphotograph, times 400. Section of mucosa of colon with underlying tumor; submucosa is replaced by dense tumor tissue which has advanced to the bases of the mucus glands.

FIG. 5.



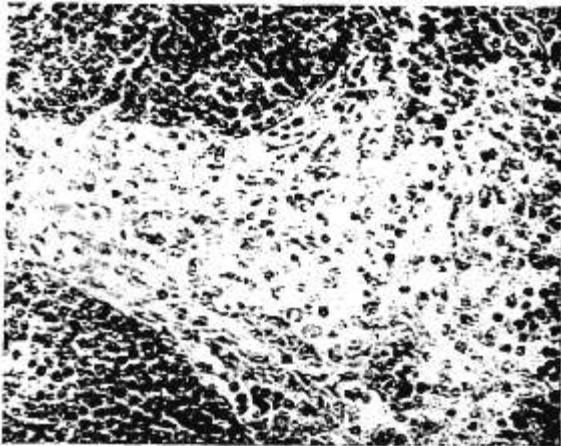
Microphotograph, times 900. Enlarged view of thin-walled capillary with surrounding tumor cells, some of which show mitotic figures.

FIG. 6.



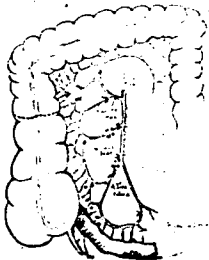
Microphotograph, times 1000. Showing characteristic arrangement of tumor cells which have vesicular nuclei of irregular size, shape and staining reactions. The fine intercellular fibrillae are represented in upper right hand corner.

FIG. 7



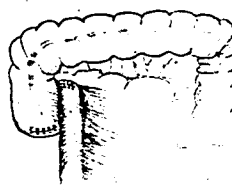
Microphotograph, times 700. Section of adjacent lymph node showing tumor metastasis in sinus.

FIG. 8.



Points at which the intestine was divided.

FIG. 9.



Points of lateral anastomosis.

He now weighs 200 pounds and his bowels move normally. The tumor involved almost all of the ascending colon, but its thickest point was at the cæcum, and it probably began here.

Pathological Report (by Dr. H. E. Robertson, of the University of Minnesota).—Gross specimen consists of cæcum with portions of ileum and ascending colon. In its preserved state the ileum portion measures 25 cm. in length. At the ileocæcal junction is an irregularly lobulated tumor mass, sharply defined on either side and occupying the proximal 6 cm. of the cæcum and ascending colon. A portion of the ascending colon, 6 cm. in length and apparently normal, projects beyond the confines of the tumor.

The walls of the bowel are infiltrated by tumor, reaching a thickness of 1.5 cm. Masses of tumor tissue also project into the lumen of the bowel, almost totally occluding it. In fact, it was found that water poured into the cæcum could not without great difficulty be forced through the tumor area.

The tumor sections with the resistance of fibrous tissue and is very firm. It is everywhere covered by intact mucosa, there being no evidence of ulceration or necrosis. Its cut surface has a grayish-white, glistening appearance. A few firm, enlarged lymph nodes are present in the neighboring mesentery and mesocolon. The appendix measures about 8 cm. in length and is apparently normal.

Microscopically, the tumor is composed of a very cellular connective tissue stroma in which are varying sized groups of strands and bundles of fibrils with many rounded and oval nuclei of varying size. Thin-walled capillaries are abundant. The tumor tissue invades the sub-mucosa and lies immediately adjacent to the mucous membrane. There are a few microscopic areas of necrosis. In some portions connective tissue fibrillæ are almost entirely absent and large numbers of rounded nuclei with irregular masses of chromatin are present. Alongside of some of these cells tiny fibrillæ may be distinguished by special stains. Mitotic figures are fairly common. Numerous eosinophiles and lymphocytes infiltrate the tissue spaces.

Microscopic examination of one of the adjacent swollen lymph nodes shows the node invaded by tissue resembling in every respect that found in the parent tumor.

Diagnosis.—Round-cell sarcoma of cæcum and ascending colon with metastasis to neighboring lymph node.

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