

ENDOMETRIOSIS OF THE RECTUM AND SIGMOID

REVIEW OF THE LITERATURE AND CASE REPORT

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LARGELY because of its relative frequency and the peculiar physiologic syndrome which is so characteristic of this condition, endometriosis of the sigmoid and rectum is of unusual interest. Specifically, the term "endometriosis" is a misnomer, since it implies that the growth is a true blastoma, for which there is little supportive evidence. Disregarding, however, this fundamental meaning, the appellation has come to be commonly accepted as designating a tumor containing aberrant endometrium or tissue resembling endometrium, which responds to the same stimuli which affect normal endometrium. A combination of these endometriomata, better designated endometrial tumors,³¹ constitutes a progressive disease referred to by Sampson³⁷ as endometriosis. Other terms applied to this condition are adenomyoma, adenomyosis¹¹ and peritonitis adenoides.⁴⁴

Endometriosis occurs sufficiently frequently to be included among the more important benign lesions of the rectum and sigmoid. Sampson,³⁶ as reported in a recent article, found endometriosis 101 times in 474 gynecologic operations, and Green-Armytage¹⁴ recorded an incidence of 8.9 per cent in a series of 1,000 consecutive surgical cases.

Endometriosis is almost exclusively a disease of women in the child-bearing age. The vast majority are seen between the thirtieth year and the menopause, although cases have been reported as early as 11,⁴⁰ and as late as 72.^{11, 44} Most instances have occurred in white women. Various structures may be involved by this process, the more important of which are the ovaries, uterus, tubes, uterine ligaments, portions of the intestine such as the small bowel, appendix, cecum, sigmoid, and rectum, the peritoneum, omentum, bladder, the pouch of Douglas or rectovaginal septum, vagina, vulva, cervix, femoral and inguinal canals, umbilicus, and abdominal wall.

Probably the most plausible theory is that promulgated by Sampson,³⁸ known as "transtubal implantation." He contends that particles of endometrial tissue or tubal mucosa are detached and regurgitated with the menstrual blood to become implanted upon a site that is especially susceptible, such as the ovary or pelvic peritoneum. These implants tend to produce endometrial or "chocolate cysts" in the ovary. Ovarian endometriomata enlarge at the time of menstruation, fill with blood and rupture, so that their contents gravitate and implant themselves on adjacent structures, usually the posterior wall of the uterus and the anterior wall of the sigmoid, where they undergo secondary

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growth. Some investigators, however, argue against this hypothesis, in that it does not explain the presence of extraperitoneal implants such as those sometimes found in the rectovaginal septum, at the umbilicus and in the inguinal region. The serosal theory¹⁸ is based upon the fact that the entire epithelium of the female genital tract is derived from the celomic mesothelium, so that, as a result of chronic irritation or some similar process, the serosa may undergo metaplasia or revert to its primitive function. Another theory is that endometriosis is the result of cellular metaplasia brought about by glandular dysfunction.² It has also been suggested^{22, 46} that these tumors may develop in adult life from embryonic rests, from müllerian ducts or the wolffian body. Still another belief is that they are diverticula of endometrium which invade the wall of the uterus and adherent structures. Many other hypotheses have been offered, but may be dismissed as of no significant import.

Heidler¹⁵ classifies this condition into endometriosis interna, representing the presence of heterotopic uterine glands in the deeper muscular layers of the uterine and tubal wall, and endometriosis externa. It is in this latter group that proctologists are especially interested, since involvement of the rectovaginal septum, rectum and sigmoid is the most frequent and important of all the external endometriomata.

Inflammatory reaction with fibrosis and adhesions is, according to MacLean,²⁶ characteristic. The most common site of endometrial implants is where the peritoneum is folded irregularly. Those of sufficient consequence to demand consideration are on the antimesenteric border of the sigmoid, at the attachments of the epiploic appendices and in the culdesac of Douglas. In the majority of cases these implants present themselves as one or more firm nodules varying in size from a buckshot to a cherry, and situated in the rectovaginal septum or culdesac of Douglas. Ordinarily they are slightly movable. They seldom attain large proportions, although instances have been reported where the growth was noted as a single, ill-defined mass which was of sufficient size to cause obstruction. One feature that is quite characteristic of endometriosis is that the mucosa of the rectum is rarely involved, as evidenced by its being freely movable over the tumor or tumors. This explains why ulceration seldom occurs and bleeding is infrequently mentioned.

Following involvement of the rectovaginal septum, the disease process may become diffuse, invade the muscular coat of the rectum and cause subsequent narrowing of the lumen. As pointed out by Oehlecker,³³ two forms of stenosis of the rectum and sigmoid have been encountered: (1) The tong-shaped constriction of the rectum together with a rectovaginal endometriosis; and (2) the rarer form which is fixed merely to the sigmoid flexure and has no relation to the genital organs.

Involvement of the sigmoid, according to Cullen,⁹ is secondary to endometriosis of the rectovaginal septum. On the sigmoid the endometrial or adenomyxomatous tumors are of smaller size and occur as tarry cysts or raspberry-like elevations. A marked degree of puckering and scarring is noted which simulates that produced by a scirrhous carcinoma. Where stricture

exists it will be found hard and annular in type, yet usually the mucosa is uninvolved. It has been mentioned that the adhesions in patients with transplanted endometrial tissue are almost pathognomonic in that they are quite firm and rigid.⁶ Like all endometrial tumors, they tend to enlarge slowly, are capable of invasion and metastasis, but are curable. It should be mentioned that malignancy has developed from an endometriosis situated in the rectovaginal septum.^{40, 45} In one case metastasis to the lung was noted.²⁴

On pathologic examination, sections show the presence of gland ducts extending beneath the mucosa into the muscular layer. The glands are lined with a single layer of typical endometrial epithelium, while outside the gland is a thin zone of endometrial stroma. Varying amounts of fibrous tissue are noted between the smooth muscle fibers. Ordinarily the mucosa is unchanged, although scattered areas of atrophy are noted.

The rectovaginal septum is the most common site of extra-abdominal endometriosis. In a series of 576 patients with adenomyoma affecting 689 organs, Masson²⁷ found the rectovaginal septum involved in 20 instances, and the sigmoid in 14. Polster³⁴ collected 90 cases and Keene²⁰ six, in a series of 118. Other instances of endometrial involvement of the rectovaginal septum, rectum and sigmoid have been reported.^{4, 5, 7, 8, 10, 12, 13, 17, 19, 21, 23, 26, 28, 29, 30, 32, 33, 35, 42, 43, 47}

In a general way, it may be said that the symptoms of endometriosis are similar to those of chronic inflammation without the infection and suppuration.³ Although they vary according to the size and extent of the growth, in almost every case they are increased in intensity at the time of menstruation. Usually, a history of progressive constipation over a period of months or years is obtained. In a few instances the constipation becomes so obstinate in type that when the patient seeks advice a partial obstruction is found. Pain in the rectum is more or less a constant feature and is described as a dull, aching discomfort, intensified by defecation and especially severe during the menstrual period.

Attention has been called to the fact that the symptoms tend to become worse and more prolonged each month, in those cases in which no treatment has been instituted.²⁹ Dyspareunia, dysuria and pain over the sacral region are not uncommon, but bleeding is infrequent. Diarrhea may occur, but is unusual. Sterility has been cited in 30 to 40 per cent of all cases observed. Dull abdominal pain in the left lower quadrant is usually present where the sigmoid is involved.

A history of rectal pain in a female during the years of ovarian activity that is constantly accentuated and is progressive at each menstrual period and which does not entail rectal bleeding, is highly suggestive of endometrial invasion of the rectum or rectovaginal septum. In the presence of the same symptoms, together with progressive constipation and left lower abdominal pain, involvement of the sigmoid must be suspected. Digital examination elicits one or more firm nodules in the septum that are usually exquisitely tender, not fixed, with the overlying mucosa movable and intact. Stricture of the sigmoid

due to endometrial implantation is usually not complete in its circumference. It is of annular type and hard, with much puckering, but the mucosa usually appears normal. Through the abdomen, sigmoidal endometriosis may be inferred by the presence of "chocolate cysts" adherent to its surface, which, when removed, reveal areas of puckering. A positive diagnosis can be made only by microscopic examination.

The treatment of endometriosis of the rectovaginal septum, rectum and sigmoid is essentially surgical, although radium or roentgenotherapy may be employed. Except where the rectal or sigmoidal growth is very large or a

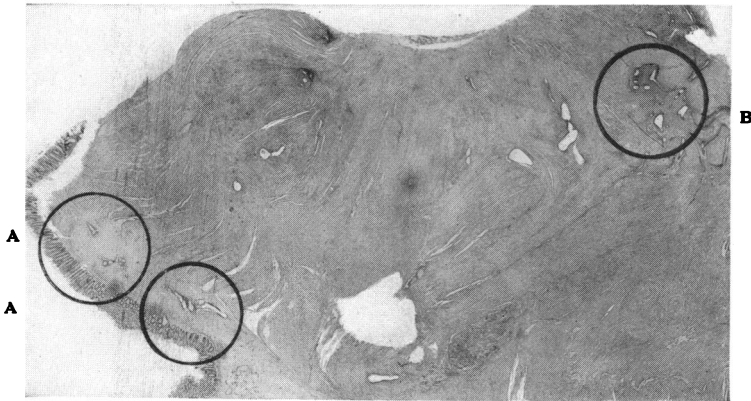


FIG. 1.—Endometriosis of the sigmoid. Low power $\times 10$ showing general topography of the much thickened intestine with the normal mucosa along the lower border. Several groups of epithelial-lined spaces may be seen lying in the submucosa (A), and also deep in the thickened wall particularly in the upper portion of the section (B).

stricture is present, the safest and simplest procedure is to remove all ovarian tissue, following which the growth will regress and symptoms disappear. Lockyer²⁵ reports good results after total hysterectomy and bilateral oöphorectomy, with entire regression of the rectal tumor. Colostomy is indicated where the growth threatens to cause obstruction. Under such circumstances, an ideal procedure is to give the patient a temporary colostomy, perform bilateral ovariectomy, or restore the normal continuity of the bowel. Where the sigmoid is involved resection may be necessary, but removal of the tumor by an elliptic incision with transverse suture of the bowel and omental graft, as suggested by MacLean,²⁶ seems a very practical procedure. Instances have been recorded where endometriosis of the rectovaginal septum has disappeared under the influence of roentgen or radium therapy or a combination of the two.^{1, 18, 29, 41}

Case Report.—A white female, age 36, was admitted to the hospital June 24, 1934, because of bleeding. The family and personal history were irrelevant, other than that the patient stated that she has had a straw colored vaginal discharge for three years. Examination showed multiple uterine fibroids and a left salpingo-oöphoritis to be present.

Laboratory Data.—Uranalysis: Sp. gr., 1.014, acid; albumin, negative; sugar, negative. Microscopic: Epithelia, mucous shreds, few pus cells. Blood examination: Leuko-

cytes, 4,400; hemoglobin, 12.2 Gm.; red blood cells, 3,650,000. Wassermann and Kahn, negative; blood sugar, 142 mg.

Operation.—June 25, 1934: The uterus was delivered through a median abdominal incision, the left infundibulopelvic ligament was ligated and cut, and the right and left broad ligaments were ligated and uterine arteries ligated. The uterus was amputated

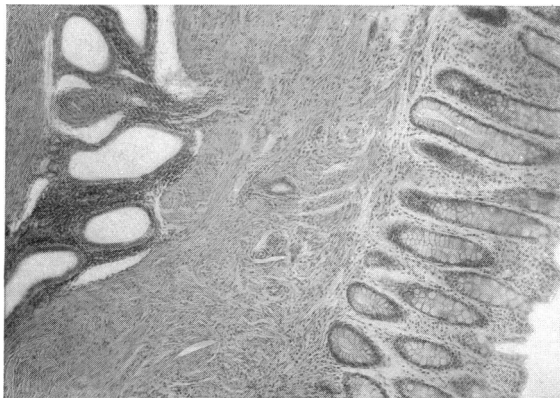


FIG. 2.—Area A. Endometriosis of the sigmoid. High power ($\times 100$) (A) showing normal mucosa and submucosa in which a portion of the endometrioma is seen below. Note the large glands lined with tall columnar epithelium surrounded by typical tunica propria similar to that in the uterus.

at the cervix and the cervical canal cauterized with phenol and alcohol. Raw areas were peritonealized with the bladder fold of peritoneum and the round ligaments sewed to the cervical stump. A Mikulicz procedure was employed in dealing with the involved sigmoid which was mobilized and brought out through a stab incision on the left side.

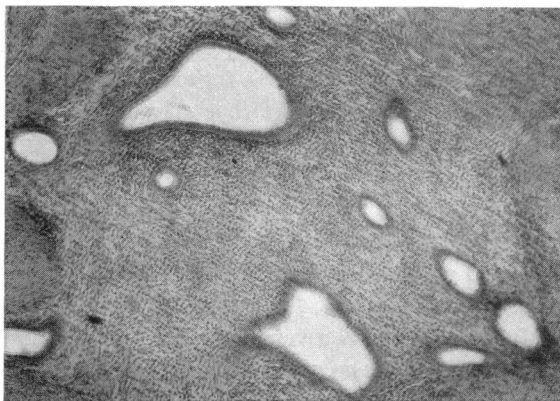


FIG. 3.—Area B. High power ($\times 150$) showing the endometrioma deep in the thickened intestinal wall. Note the typical tunica propria around the columnar lined glands.

The parietal peritoneum was sewed to the visceral peritoneum, and the fascia and skin of both wounds closed anatomically. The second stage operation was performed June 30, 1934. The patient was discharged August 23, 1934. General condition, good; wound on left side still draining.

Operative Findings.—Multiple fibroids of uterus; both tubes thickened and inflamed; left ovary sclerotic and cystic; appendix moderately inflamed; annular constricting mass

just above rectosigmoidal junction in the sigmoid; liver negative; no evidence of metastases.

Pathologic Examination.—Gross: "Specimen consists of two pieces of tissue. (A) An opened uterus 15 by 12 by 4 cm. showing many fibroids, each cut open in different directions, making it impossible to orient the specimen. Tubo-ovarian mass 7 by 5 by 2.5 cm. Tube definitely thickened. Ovary shows corpus luteum and small cystic spaces. *Microscopic* examination of the ovary shows a formation of endometrial tissue. Some fields are very typical. The whole history corresponds to that of endometrioma. (B) Specimen consists of a section of gut about 15 cm. in length, opened longitudinally. About the center of this section is a thickening of the wall which is not equal in all parts; in some places it is two to three times greater than in others. The thickened portion is very firm and is more or less rigid under the knife. *Microscopic* examination shows fair preservation of the normal condition of the mucosa but the rest of the wall is abnormal. There is marked thickening due to nonstriped muscle and fibrous tissue in which are glandular formations and interstitial tissue which on the whole is rather typical of endometrium. Some of these gland spaces are dilated and filled. Pathologic Diagnosis: Endometrioma of the sigmoid and ovary."

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