then its structure perverted by nervous influences; is it due ever or always to infection, as seems possible from the frequent relation to angina, influenza, rheumatism, etc.; or is there a hypertrophy secondary to a deficiency, a response to disease in the intestines, or some ductless gland?

We can not tell as yet; but with close clinical observation, with accurate histologic examinations and with chemical and physiologic investigations such as are now being made, especially through the cooperation of surgeons who treat such cases, we may be sure that the answer will soon be given.

Original Articles

PROLAPSE OF THE RECTUM AND SIGMOID FLEXURE, FOLLOWING HYSTERECTOMY.

LOUIS J. HIRSCHMAN, M.D.

DETROIT.

I wish to report briefly two cases which came under my observation during the past year, and to bring out one of the sequelæ of hysterectomy, either abdominal or vaginal, which has not been sufficiently emphasized heretofore. There is something more to be considered in performing hysterectomy by either route than simple removal of the diseased uterus, as the following case reports will illustrate:

CASE 1.—*Patient*.—Mrs. B., aged 61, weight 220 pounds, iv-para, seen in February, 1907.

History.—The patient's general health had been good, except for occasional rheumatic attacks and constipation dating back over thirty years. On every attempt at defecation she had a feeling as though the rectum was filled, but in spite of straining she was unable to expel anything without assistance. She was in the habit of using various cathartics until the last two years, when she had to resort to enemas for relief. Even after movements the feeling of fulness in the rectum was not relieved. During the two weeks before she consulted me she was unable to pass the enema tube. Two years previously she had undergone a vaginal hysterectomy, and ever since the operation her constipation seemed to grow worse, and the sense of fulness was unrelieved. Since the operation the rectocele, which was quite small previously, had greatly enlarged, and during defecation became greatly distended and protruded for some distance from the vulva.

Examination.—This revealed a small prolapse of anal mucous membrane, a protruding rectocele, and procidentia recti of the third degree. On straining efforts the bowel was prolapsed down to the anus, but did not protrude, while the rectocele became very prominent. On bimanual examination, the space formerly occupied by the uterus was found filled with prolapsed intestines.

CASE 2.—*Patient*.—Miss M. R., aged 37.

History.—The patient had suffered from constipation for twenty-one years. Four years ago she had a left salpingo-oophorectomy performed; the following year, abdominal panhysterectomy; two years following this, laparotomy for the relief of adhesions, anterior fixation of sigmoid to the abdominal wall, and Whitehead operation. The patient consulted me Dec. 16, 1907, complaining of backache, digestive symptoms, abdominal fulness and obstinate constipation. She stated that she had been taking cathartics of many kinds for years, but with very unsatisfactory results. Since the hysterectomy, three years previously, on several straining efforts, she noticed some protrusion of the rectum and pressure symptoms in the vagina.

Examination.—This revealed a distended and sensitive abdomen, cicatricial contraction of the anus, prolapse of the rectum and sigmoid of the third degree, and the pelvis filled with prolapsed bowel.

Here were two patients both giving a history of constipation for years, in both of whom, after removal of the uterus, a similar state of affairs existed, namely, the prolapse of the rectum and sigmoid, and the space formerly occupied by the uterus filled with prolapsed bowel.

From the study of these cases, I have come to the conclusion that both patients suffered from a mild degree of rectal prolapse before hysterectomy, but after the operation both became steadily worse; the bowel symptoms becoming much more severe and necessitating further surgical attention. The removal of the uterus in both cases took from the rectum a very powerful anterior support, and in Case 1, the weakened perineum and comparatively small rectocele took away the support also of the rectovaginal fascia, inviting, as it were, the prolapsed condition. I do not infer that every hysterectomy is followed by the prolapse of the rectum or sigmoid but do maintain that in patients giving a history of chronic constipation, if hysterectomy is to be performed, some support of the bowels should be supplied to replace that which the removal of the uterus takes away from it. The broad ligaments should be sutured together whenever practicable, all stumps and raw surfaces carefully covered with peritoneum, to lessen the possibility of adhesions, and the sigmoid raised up and supported by mesosigmoidopexy a simple procedure devised by me.

The operative history of these two cases was so nearly identical that with a few minor exceptions a description of one will answer for both.

CASE 1.—*Operation*.—Patient entered Harper Hospital, Feb. 23, 1907, and was operated on the following morning. The abdomen was opened a little to the left of the median line, the incision being two inches above and paralleling Poupart's ligament. Nearly one-half of the sigmoid flexure was found telescoped into the rectum, and the space formerly occupied by the uterus filled with the rest of the prolapsed sigmoid. The stump of the right broad ligament was found firmly attached to the sigmoid, thus holding the lower part of it in the prolapsed condition. The mesentery of the sigmoid was very much elongated, allowing the bowel to remain in the lower pelvis. The adhesion to the stump of the ligament was separated, and the raw surface of the broad ligament covered over with peritoneum; the prolapsed bowel was lifted out of the pelvis, and the outer surfaces of the mesentery of the large loop of the sigmoid lightly scarified.

Method of Suturing: Beginning toward its deep attachment (about six inches from the bowel in this case), the two opposing surfaces of the mesosigmoid were brought together by interrupted twenty-day catgut (No. 2) sutures. Three rows about an inch apart were placed in this manner, the upper row being three inches from the bowel. As the sutures were tied, the sigmoid and the rectum were lifted from their prolapsed position. For fear that the curve of the loop might be lessened and possible kinking take place (a rather remote possibility on account of the strength of the adhesions), the longitudinal muscular band of the sigmoid, together with an eighth of an inch of the serous and muscular coats of the bowel on either side of the band, was rolled in on itself by interrupted transverse catgut sutures, placed three-quarters of an inch apart around the curve, and for two inches beyond at each side. This rolling in of the muscular band made a rib of firm muscular tissue, which materially increased the size of the curve and greatly strengthened it. The scarification of the sutured surfaces of the mesosigmoid assured us of an adhesive surface of over eighteen square inches, and yet

* Read in the Section on Obstetrics and Diseases of Women of the American Medical Association, at the Fifty-ninth Annual Session, held at Chicago, June, 1908.

allowed perfect motility of the organ. The abdomen was closed, the rectocele reduced and repaired, and the prolapsed anal mucous membrane resected.

Postoperative history.—The patient reacted well and without nausea, and with the exception of a small rectovaginal fistula which developed between the rectocele wound and the site of the resected anal prolapse, made a perfect recovery. The fistula healed up after readjustment of the anal flap, without any further trouble. The patient was kept on her back for ten days, on a restricted assimilable fluid diet, and her bowels not allowed to move during that time. On the eleventh day she was given an oil enema, preceded by a small dose of compound licorice powder, given the night before, and she had an easy movement. She was allowed to turn on either side, supported by pillows, and at the end of the fourth week was allowed to walk and partake of full diet. She left for home at the end of six weeks, having good daily evacuations of the bowels without cathartics or enema.

Subsequent History.—Five months after the operation she called at my office, while on a visit to the city, and I had an opportunity of examining her. Everything was in perfect shape; she had daily stools without any assistance (after thirty years of constipation), and stated that her health in every way was perfect.

CASE 2.—Operation.—The patient entered Harper Hospital, Feb. 16, 1907. Laparotomy revealed a similar condition to that in Case 1, except that in this case two adhesive bands about three inches long extended from the sigmoid to the old abdominal scar, holding the sigmoid in a position of acute angulation. The large part of the rest of the sigmoid filled the space formerly occupied by the uterus. Adhesions were broken up, the sigmoid drawn up out of the pelvis, mesosigmoidopexy performed by the method described in Case 1. A cicatricial contraction of the anus—the result of the Whitehead operation done for prolapse the preceding year—was excised, and the anal orifice restored to its normal size by a plastic operation.

Postoperative History.—The patient made an uninterrupted recovery, being kept in bed for three weeks. She was put on an absorbable liquid diet until after her first movement, on the eighth day; then she was gradually allowed full diet. The bowels were emptied every other day by oil enemata, and she had her first natural movement unassisted on the twenty-second day after the operation. The patient was last seen Feb. 8, 1908, when examination showed no evidences of prolapse after severe straining; the bowels were moving regularly.

This last case is of particular interest because the patient had been operated on twice before for the same condition without success, both amputation of the prolapsed bowel below and suspension to the abdominal wall having failed of their purpose. The technic referred to in this paper brings the prolapsed portion up and holds it there by its natural support, the mesosigmoid, which, being stitched to itself, becomes twice as thick and twice as strong.

By not causing any adhesion of the bowel itself to any fixed surface the natural mobility of the bowel is not interfered with in any way.

CONCLUSIONS.

From these two cases I draw the following conclusions:

1. In patients requiring hysterectomy who give a history of chronic constipation, the possibility of postoperative prolapse of the rectum and sigmoid should be borne in mind.

2. In patients with a history of chronic constipation who require hysterectomy it must be remembered that the removal of the uterus deprives the rectum of an important anterior support and the broad ligaments should be brought together whenever possible.

3. In these cases, perineorrhaphy and posterior col-

porrhaphy should be performed when laceration or rectocele exists.

4. When any tendency to prolapse of the rectum or sigmoid is observed mesosigmoidopexy should be done as a prophylactic measure.

5. Mesosigmoidopexy should be the operation of choice in every case of complete prolapse of the rectum and sigmoid, whether following hysterectomy or from other causes, as it holds the sigmoid in place by its natural support, its own mesentery; which being double its original thickness becomes twice as strong a support. By not causing a fixation of the bowel to the abdominal or pelvic wall, its natural mobility is not interfered with, and the normal peristaltic movements are not interfered with.

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ABSTRACT OF DISCUSSION.

DR. WALTER B. DORSETT, St. Louis: At the meeting of the American Association and Gynecologists and Obstetricians at Cincinnati I read a paper on the utilization of the broad and round ligaments following hysterectomy. In this paper I directed attention to the fact that cicatrices as a result of large denuded surfaces brought the rectum down into such a position that constipation frequently followed and also that some cases of enuresis due to prolapse of the bladder were caused by the fact that no attention had been paid to the restoration of the broad and round ligaments as supports of the uterus. While it may be a question whether round and broad ligaments are natural supports to the uterus, as a matter of fact when they are severed and brought down into the stump they hold up the rectum and the bladder.

DR. L. J. HIRSCHMAN, Detroit: In answer the sutures were introduced crosswise of the vessels, and I was careful to avoid including the vessels in the sutures.

THE SURGICAL IMPORTANCE OF CERVICAL RIBS TO THE GENERAL PRACTITIONER.*

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I should scarcely venture to present this topic here, were it not that the general medical profession has not yet become familiar with it. Surgeons and neurologists have in recent years awakened to the great value of studies in embryology, comparative anatomy and pathology. The results of such studies are, however, more or less unknown to the bulk of practitioners, because they are published chiefly in journals devoted to the specialties of medical science. The surgical importance of vestigial structures, like the omphalomesenteric duct, the thyroglossal duct and the branchial clefts, and the relations of bony and other structural anomalies have a place, therefore, in the discussions of this Section.

A few years ago a distinguished surgeon remarked in a formal address that accurate anatomic knowledge was now hardly an essential in the training of a surgeon. Such an opinion is invalidated by a brief reference to the development of the surgery of cervical ribs. Most of us who spent the early days of our training in dissecting room study and teaching have been familiar with skeletal anomalies found in the vertebral column and ribs. Lumbar ribs, cervical ribs and supernumerary vertebrae are recognized as occasional evidences of the relation of the human vertebrate to other animals pos-

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