Complications of Abdominoperineal Resection

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Introduction

CARCINOMA of the intestinal tract occurs most frequently in the rectum. We believe that abdominoperineal resection is the operation of choice for patients with cancer of the rectum, particularly if the lesion is at or below the peritoneal reflection. Since it forms a standard of comparison for other operations for carcinoma of the rectum, it is important to know the morbidity as well as the mortality rate associated with this operation. In recent years our mortality rate has been about 5 per cent. The purpose of this study is to review the complications of abdominoperineal resection and to determine their influence on the morbidity and mortality rate.

Data

The histories of 300 patients who had an abdominoperineal resection at the Lahey Clinic from January 1950, to December 1954, have been reviewed. Eighteen patients, nine men and nine women, have not had an adequate follow up. While some of these untraced patients might have developed late complications such as stricture of the abdominal stoma, they do not affect the postoperative morbidity rate presented in this record.

Sex: One hundred and seventy-one patients (57 per cent) were males and 129 (43 per cent) were females. There was no important sex difference as far as morbidity is concerned except for urinary tract complications which were three times as frequent in men as in women.

Age: Only 13 (4.3 per cent) of the 300 patients were less than 40-years of age and 39 (13 per cent) were more than 70-years of age. The ages of patients with complications related to infection, the incision, or the operative field were similar to the ages of the patients without complications. Urinary tract and cardiopulmonary complications were more prevalent in the older patients.

Polyps: Benign polyps were present in the resected specimen in 52 patients (17.3 per cent). Malignant polyps were associated with a fully developed, ulcerated carcinoma in five cases. In 12 patients the carcinoma of the rectum occurred as a malignant polyp. Abdominoperineal resection was performed for carcinoma of the anal canal in seven patients.

Morbidity

One hundred and twenty-five patients (41.7 per cent) had no complications. In 175 (58.3 per cent) some type of complication developed. They have been classified as follows: complications related to (1) infection, (2) the small bowel, (3) wound disruption, (4) the colostomy, (5) the urinary tract, and (6) the cardiovascular and pulmonary systems. All complications were included although some were of minor significance and added little to the morbidity. Complications were responsible for the death of 14 patients (4.6 per cent). Sixty-two patients (20.6 per cent, 44 men and 18 women) had more than one complication.

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Complications Related to Infection
28 Patients (9.3 per cent)

Peritonitis: Six patients (2 per cent) had some form of peritonitis. It was generalized in three patients, one of whom died on the thirteenth postoperative day. In one patient the generalized peritonitis was secondary to evisceration and the patient recovered after resuture of the wound and treatment with antibiotics. In the third patient generalized peritonitis was thought to be secondary to a traumatic perforation of the transverse colon during the surgical procedure. The three remaining patients had localized peritonitis. One had a retroperitoneal abscess which was successfully treated by drainage and administration of antibiotics. The other two had pericolic abscesses which were the result of perforation of the colon during colonic irrigation. One occurred five months after operation and the other developed after an elapsed of three months. Both patients recovered after incision, drainage and antibiotic therapy.

Abdominal Wound Abscess—11 Patients (3.6 per cent): Two abdominal wound abscesses occurred in patients with diabetes mellitus. In 250 patients the colostomy was brought out through the laparotomy incision and seven of these developed an abscess in the incision. Of the 50 patients in whom the colostomy was established through a stab wound, abdominal wound abscess occurred in one. The infection subsided promptly in all but one patient who developed a colocutaneous fistula which prolonged convalescence, but the fistula finally healed spontaneously.

Perineal Wound Abscess—11 Patients (3.6 per cent): These abscesses usually appeared about the tenth postoperative day. In three patients they were the result of injection developing in a hematoma of the posterior wound. All abscesses healed after repeated irrigation and antibiotic therapy. A persistent perineal sinus lasting one year after operation developed in each of four patients and in each case the sinus was excised. In three patients no evidence of tumor was found on histologic examination of the excised tissue. The fourth had recurrent adenocarcinoma.

Complications Involving the Small Intestine
17 Patients (5.6 per cent)

Six patients (2 per cent) developed obstruction as a result of adhesions. The obstruction was relieved by lysis of the adhesions. Internal hernia developed in four patients (1.3 per cent). In two the herniation occurred through the pelvic peritoneal floor. One produced acute obstruction and was treated by release of the herniation and repair of the pelvic floor. The other was an incidental finding at operation four years after the abdominoperineal resection. There was no obstruction of the small bowel. In the remaining two patients the herniation occurred through the left lumbar gutter. One occurred 20 days after the abdominoperineal resection and at operation it was discovered that three to four feet of the terminal portion of the ileum had become gangrenous. The patient recovered following resection of the gangrenous portion of the bowel and closure of the defect. The other herniation was found ten months after resection when small bowel obstruction developed. In both of these patients the left lumbar gutter had been closed. In 60 patients in whom the left lumbar gutter was not closed no instances of small bowel obstruction occurred. Seven patients (2.3 per cent) had paralytic ileus. In one, bilateral bronchopneumonia developed subsequently and the patient died. The others responded to intestinal intubation.

Wound Disruption
Six Patients (2 per cent)

In five of these patients the colostomy had been established in the main incision. In one patient the colon had been exteriorized through a stab wound. (In the entire