Endoscopic Abdomino-Perineal Resection of the Rectum (A Case Report)

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Summary: *Endoscopic approach to general surgical procedures has been gathering at a rapid pace. It is reported here a case of endoscopic abdomino perineal resection in the treatment of rectal carcinoma. Operation was not only technically feasible, it was attended by a much smoother post-operative course, shortened hospital stay and reduced period of convalescence. Pathology report showed that tumour clearance was satisfactorily achieved in using this technique.*

Key Words Laparoscopy, Surgical treatment, Bowel resection, Abdominoperineal resection..

The application of endoscopic techniques into the realm of general surgery has been advancing at an incredibly rapid pace. Laparoscopic cholecystectomy (1-6), appendicectomy (7,8), peptic ulcer surgery (9,10), fundoplication (11), herniorrhaphy (12) and bowel resection (13,14) are rapidly becoming established procedures. The use of endoscopic techniques in abdomino-perineal resection is expected to gather momentum; Indeed, of all colorectal resections, abdomino-perineal resection is one of the most suitable operations for the adoption of endoscopic techniques. This case report illustrates some of the technical points of the operation and the advantages which may be gained for the patient using this technique.

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CASE REPORT

The patient, a sixty-five (65) year old caucasian lady, who presented with rectal bleeding of several years duration, but with a more recent exacerbation. She also complained of the passage of material which looked like "liver" tissue. Her bowel habits were otherwise normal and her appetite was undiminished. There was no history of weight loss and no other systemic symptoms. Her past history included cholecystectomy and hysterectomy. Examination revealed a soft tumour in the lower rectum, 4 cm from the anal verge and this was found to be malignant on biopsy. Barium enema confirmed a lesion in the rectum and diverticular disease of the sigmoid colon.

Following appropriate preparations, she was subjected to endoscopic abdomino-perineal resection of her rectum.

OPERATION

Operation was conducted under general anaesthesia, with the patient in the supine position and the legs virtually straight, but slightly abducted at the hip joints. The legs were supported in Lloyd Davies stirrups. Routine laparoscopy was performed. No intra-abdominal tumour spread was found. The anus was closed with a purse-string suture and a urinary catheter was passed.

A 12 ml port and a 10 ml port were then in-

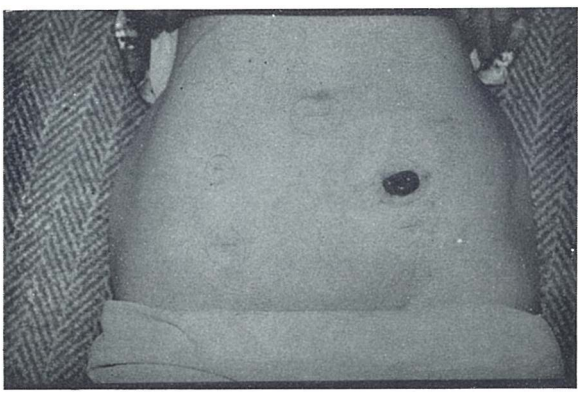

Fig. 1. On the abdominal wall, the places where the ports were inserted one week after the operation.

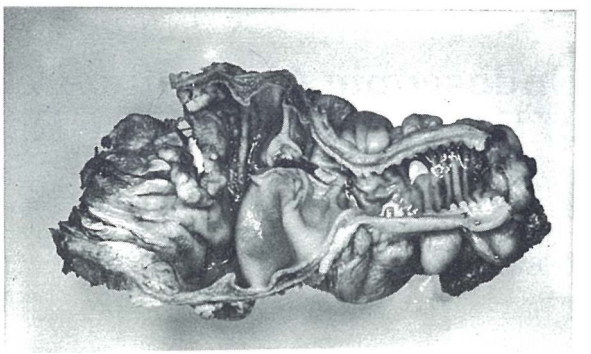

Fig. 2. Macroscopic specimen of the amputated rectum.

serted in the right abdomen and likewise two 10 ml ports were inserted on the left abdomen (see figure 1). Using the right ports, two graspers were inserted and applied to the left colon. The patient was then rotated slightly to the right side, thus exposing the left paracolic gutter. The left colon was then mobilised from the pelvic brim to the splenic flexure. In this dissection, the surgeon stands between the patient's abducted legs. The bowel was mobilised towards the mid-line, taking care to preserve the ureter and the ovarian vascular pedicle.

Whilst maintaining a slightly head down incline, the surgeon changed his position to stand on the patient's right, with the monitor now at the foot of the operating table. Mobilisation of the rectum was then commenced from the pelvic brim on both sides down to the levator muscles.

The inferior mesenteric vascular pedicle was then secured with clips and divided. This dissection was carried towards the site of colostomy using a combination of blunt and sharp dissection of the mesentery of the left colon. The vessels were individually divided between metal clips.

The rectum was also mobilised from the sacral hollow. This dissection was taken all the way down to the anococcygeal raphe. Ligamentous attachments to the lateral wall of the pelvis were divided between clips. Finally dissection between the bladder and the rectum anteriorly was performed, with a combination of blunt and sharp dissection down to the bladder neck region.

When the rectum was fully mobilised and the left colon was freed, a sling was passed down the left upper port around the colon and back again through the port. When the left upper port was removed and the port site enlarged, it was possible to deliver the colon into the wound. This was divided with a GIA linear cutter. The proximal part of the loop was retained outside the abdomen to construct a colostomy. The distal end was then reintroduced into the peritoneal cavity.

The perineal resection was then commenced in the usual manner and the pelvic cavity was entered through Denonvillier's fascia posteriorly. With further dissection and division of the levator ani muscles, as well as the anococcygeal raphe, it was possible to retrieve the sigmoid colon and proximal rectum and evert the bowel through the perineal wound thus making a detachment of the front of the rectum from the bladder neck relatively easy.

The abdomen was then washed out with normal saline. Two redivac drains were left in the peritoneal cavity and brought out on each side of the perineal wound. This perineal wound was closed in layers.

POST-OPERATIVE COURSE

Her post-operative course was smooth, with bowel sounds returning on the second post-operative day and her colostomy starting to work on the third post-operative day. There was relatively little pain and the narcotic requirements were much reduced. The patient was ambulating on the third post-operative day without assistance. Indeed, other than for social reasons, she could have been discharged from hospital on the fourth post-operative day. She returned to fairly full activity in ten (10) days post-operatively.

PATHOLOGY

Pathology report showed a moderately well diferentiated adeno-carcinoma of the rectum confined to the bowel wall. The margins of surgical excision were clear, (see figure 2).

DISCUSSION

The standard surgical treatment of low rectal cancers is abdomino-perineal resection. This is a major undertaking with significant operative risks (15). Convalescence takes four to eight weeks. The advent of endoscopic surgical procedures in cholecystectomy, bowel resection and gastric surgery gives impetus to other applications. It is demonstrated by this case that endoscopic abdomino-perineal resection is technically feasible and with experience can be done in a reasonable time frame. There is good evidence to suggest that gastrointestinal function is resumed early. The post-operative course is comparatively smooth, with very little pain and disability to the patient. Blood loss is also minimised. Both the hospital stay and period of convalescence reduced. We are in the early stage of development of the endoscopic approach to abdomino-perineal resection. Both theoretically and practically the basis for this approach is sound.

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