

Anterior Resection of the Rectum

Single Surgical Procedures

6

A Colour Atlas of

Anterior Resection of the Rectum

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Die Wiedergabe von Gebrauchsnamen, Warenbezeichnungen und dergleichen in diesem Buch berechtigt nicht zu der Annahme, daß solche Namen ohne weiteres von jedermann benutzt werden dürfen. Vielmehr handelt es sich häufig um gesetzlich geschützte, eingetragene Warenzeichen, auch wenn sie nicht eigens als solche gekennzeichnet sind.

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Introduction

Anterior resection of the rectum is an abdominal operation in which the upper part of the rectum and its associated lymphatic field is removed, and continuity restored by anastomosis between the colon and the remaining ano-rectal segment. In a 'high' anterior resection, only the upper part of the rectum and the lower sigmoid colon are removed, and a rectal segment of 10 cm or so is left. In a 'low' anterior resection, the lower sigmoid and most of the rectum are removed and a short ano-rectal segment, perhaps only 4–5 cm long, is left for anastomosis. The 'low' operations are usually more difficult technically, and have a higher incidence of post-operative leakage. The operation is easier in a woman than in a man owing to the wider pelvis, and is always more difficult in fat people.

When doing any resection of the large bowel with anastomosis, one must ensure that both ends of remaining bowel being joined have a good blood supply and that they can come together without tension; and these principles must be firmly adhered to when doing an anterior resection. The blood supply of the distal ano-rectal segment is hardly ever in doubt, as there are rich vascular anastomoses between the middle and inferior haemorrhoidal vessels and other vessels of the pelvic floor. The length and blood supply of the colonic end, however, must always be carefully considered and checked. In most 'high' anterior resections the upper sigmoid colon can be brought down with good blood supply and without tension for anastomosis, but for 'low' anterior resections it may be necessary to mobilise the splenic flexure and to divide the left colic artery and vein. The descending colon can then be brought down low in the pelvis for anastomosis, relying on the marginal artery from the middle colic for blood supply.

The actual anastomosis may be carried out by suture, or by the use of the 'stapling gun'. Both these techniques are illustrated in this volume. It is usual to use a suture technique when the two ends of bowel to be joined are fairly accessible, but for very low anastomoses suturing can be extremely difficult and unsatisfactory, and a safer anastomosis can be carried out using the 'gun'.

The suture technique illustrated in this volume is a 2 layer method, using an outer interrupted seromuscular layer of 3.0 silk and an inner continuous all-coats layer of 3.0 Dexon or catgut. However, single-layer anastomoses using all-coats non-absorbable stitches are preferred by some surgeons and one of the authors (RJH) favours single-layer sero-muscular sutures that do not incorporate the mucosa. Despite such minor differences both the authors share a practical surgeon's preference for a manual anastomosis if this can be performed without undue difficulty. However, there is little doubt that the new stapling devices enable many surgeons to perform an anastomosis several centimetres lower than they would previously have attempted and thus perform more sphincter-conserving operations. A small reservoir of distal rectum can usually be left above the levators to provide discriminatory sensation and some reservoir function. Post operative continence is usually excellent if 2–3 cm or more can thus be spared above the anorectal ring and even colo-anal anastomosis provides acceptable continence in most patients.

The SPTU Russian gun was the first stapling device presented to Western surgeons. It can give good results if it is well maintained and the stapler washers and blades are re-loaded with obsessional care. It has, however, distinct dangers in the average busy operating suite with a variety of staff involved in its servicing and usage. For this reason most surgeons will choose one of the factory-packed disposable guns or cartridges marketed by the American Auto-Suture Company or by the Ethicon Company. The authors' preference is for the completely disposable Ethicon gun. This has the advantage of a particularly clean cut-off of the 'turned-in' bowel ends so that problems of withdrawal from the patient are very rare. There is a real danger that these 'guns' will lead to the performance of lower anterior resections without commensurate development of skilled low pelvic dissection technique. Such a trend would be disastrous and we have, therefore, tried in this volume to emphasise the details of pelvic dissection which are relevant to the proper excision of the tumour and its surrounding lymphatics. No aspect of rectal cancer surgery is more important than the avoidance of local recurrence.

Indications

The most frequent indication for this operation is for the treatment of a carcinoma arising in the upper rectum or recto-sigmoid junction. With increasing experience, and by the use of the stapling gun, it is now often possible to remove tumours of the mid-rectum by anterior resection and anastomosis, which in earlier years would have needed excision of the rectum and a permanent colostomy. In general, rectal tumours with the lower edge below 5 cm from the anal verge on sigmoidoscopy are not suitable for anterior resection; tumours with the lower edge between 5 and 10 cm may be suitable under favourable circumstances (a thin, preferably female, patient with a fairly small tumour); and those at 10 or more cm are usually suitable. Ideally, one should aim to remove 5 cm of bowel and associated mesorectum below the tumour, but a distal margin of 2–3 cm of bowel is sometimes acceptable, particularly if the mesorectum is adequately removed. If such a policy is followed the surgeon will find that between a half and three quarters of patients can be managed by anterior resection. After initial mobilisation of the rectum it becomes apparent whether or not the mesorectum and rectum can be divided comfortably 5 cm or more below the tumour. In such cases a high anterior resection with manual anastomosis is appropriate. If further mobilisation is required a deep pelvic dissection, division of the lateral ligaments, and probably a low stapled anastomosis will now be the choice of most surgeons.

In many cases the surgeon may not be able to tell whether an anterior resection will be the right operation for a particular patient, or even technically possible, until the abdomen has been explored and the growth mobilised. Whenever there is any such doubt, the patient should be warned before operation that an excision of the rectum and permanent colostomy may prove to be necessary, and consent for that obtained. Increasing familiarity with the deep pelvic dissection will lead to a higher proportion of sphincter-conserving operations, but cure of the malignant disease must always be the first consideration.

Other indications for anterior resection are for the removal of large benign (villous) tumours of the mid or upper rectum that cannot be fully dealt with by endoscopic methods per anum. Occasionally, diverticulitis

or ischaemic disorders may lead to a stricture of the upper rectum suitable for anterior resection. Sometimes, malignant disease of the ovary or uterus may involve the rectum, and anterior resection may be necessary in clearing the pelvis of such a growth.

Contra-indications

Low rectal tumours are unsuitable, as are tumours found at operation to have extensive irremovable local pelvic dissemination; in such cases local recurrence is inevitable and would lead to obstruction and distressing symptoms.

A pre-operative biopsy that shows an anaplastic or very undifferentiated tumour of high malignancy is not now considered to be an absolute contra-indication to anterior resection. Nevertheless, such tumours disseminate more rapidly and widely within the pelvis and are more likely to permeate lymphatics and fat distal to the tumour. Thus a wide local clearance and a 5 cm distal margin are particularly needed in dealing with high grade tumours.

Pre-operative assessment

A general physical assessment of the patient's fitness for general anaesthesia and a major abdominal operation is obviously necessary in every case. Blood count, haemoglobin, urea and electrolytes should be checked, and arrangements made for transfusion if needed at operation, and before if the haemoglobin level is low. Chest x-ray and electrocardiogram are usually advisable. For large tumours, particularly those that feel fixed clinically, an excretion urogram (intravenous pyelogram) is advisable, as compression or displacement of one or both ureters may be demonstrated and the surgeon is duly warned. Excision appropriate to a malignant mass will often be more lengthy and difficult than the 'peeling-out' technique, which is satisfactory for an inflammatory one such as diverticulitis. Thus a recto-sigmoid lesion should have been accurately assessed pre-operatively by x-rays, endoscopy and, if possible, biopsy.