Salvage surgery after restorative proctocolectomy

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Restorative proctocolectomy is now the elective surgical procedure of choice for most patients with ulcerative colitis or familial adenomatous polyposis. There are four causes of failure including acute and chronic sepsis, poor function for mechanical or functional reasons, mucosal inflammation (including pouchitis and retained rectal mucosa) and neoplastic transformation. Failure rates themselves range from 5% to nearly 20%. Followed over a period of 20 years, the failure rate can be summarised approximately as 5% at five years, 10% at ten years and 15% at 15 years.

Key words: restorative proctocolectomy, elective, surgical

INTRODUCTION

Restorative proctocolectomy is now the elective surgical procedure of choice for most patients with ulcerative colitis or familial adenomatous polyposis. Complications may lead to failure defined as removal of the reservoir with establishment of a permanent ileostomy or long term diversion. Failure may be avoided for some patients by salvage surgery.

There are four causes of failure including acute and chronic sepsis, poor function for mechanical or functional reasons, mucosal inflammation (including pouchitis and retained rectal mucosa) and neoplastic transformation. Neoplastic transformation is not an indication for salvage surgery since it is not a procedure intended to avoid impending failure and to preserve anal function.

FAILURE

Failure rates themselves range from 5% to nearly 20%. Followed over a period of 20 years, the failure rate can be summarised approximately as 5% at five years, 10% at ten years and 15% at 15 years. In this long term follow up study, the reasons for failure included sepsis in 52%, poor function in 30% and pouchitis in 11% of patients followed over a median period of seven years with a range of 2-23 years.

Overall failure rates in the global series of pouch patients are as stated above. Of those who develop pelvic sepsis in the immediate post-operative period, however, it is much higher. Patients having early postoperative pelvic sepsis form a high risk group for failure which is over 25% at five years and around 40% at ten years. Whenever failure rates have been analysed, it is apparent that there is a continuing and steady rate of failure with time. Thus even septic complications may be delayed even by ten years or more.

There are now several reports in the literature of the outcome of salvage surgery. An example illustrating the type of pathology in 57 patients undergoing salvage surgery included pouch vaginal fistula (N=21), mechanical outlet obstruction (N=19), pelvic sepsis (N=14), perineal fistula (N=2), and pouchitis (N=1). Of the total, 42 (74%) had a functioning pouch. Of the 12 failures, seven had undergone excision of the pouch and five had been managed by long term defunctioning.

In a larger series of 112 patients undergoing revisional abdominal salvage surgery, 48 (41%), had poor function, 25 (21%) pouch related fistula, 26 (22%) pelvic sepsis, and 17 (15%) anastomotic stricture. Of the 112 patients, 117 operations were carried out including 85 (73%) pouch revisions or augmentations, 24 (20%) pouch advancements and 8 other procedures. Failure occurred in 20 (18%) including pouch excision in 12 and indefinite diversion in 8.

TYPE OF SALVAGE SURGERY

Salvage surgery may be either abdominal or perineal. For the former the patient should be in the Lloyd-Davies position for an abdominal approach. The strategy usually involves a reconstruction of the pouch and/or the ileoanal anastomosis or both. The surgeon should have available
strong scissors able to cut dense fibrous tissue. The following surgical principles apply:-
get behind the mesentery.
identify the pro-sacral nerves,
wash out the pouch before dividing of the bowel,
divide the bowel below the ileoanal anastomosis,
resect the lesion (Eg stricture, fistula, etc),
remodel the pouch,
carry out a manual ileoanal anastomosis
perform a defunctioning ileostomy.

INDICATIONS

Various factors must be considered when advising a salvage procedure in a patient with impending failure after restorative proctocolectomy. These include the feasibility of success, the magnitude of the operation, the overall duration of treatment and the patient’s wishes. Counselling is essential and the patient must be given a realistic estimate of the prospect of a successful outcome. The potential morbidity of removal of the reservoir resulting in a permanent ileostomy must be discussed. In a series of 68 patients undergoing pouch excision representing 5.6% of all patients in the entire series, there was one (1.5%) death, 36 (54%) re-admissions, 27 (40%) patients with delayed healing of the perineal wound, two (7%) males with impotence and one (1.5%) patient with short bowel syndrome.

Sepsis

Abdominal Approach

Pelvic sepsis or fistulation from the pouch will require an abdominal approach. Success rates vary considerably from under 25% to over 80% . . . . . . . . . It is difficult to know why this variance should be so great but this may be due to case selection, experience of the operator, or duration of follow-up. Even after a salvage operation, there is a failure rate determined by time. A 30% failure rate following abdominal salvage was reported at five years. There appears to be a difference in prognosis for patients having salvage surgery for sepsis being better where the lesion is due to fistulation from the upper part of the reservoir particularly the stapled terminal ileum compared with sepsis in the lower pelvis around the ileoanal anastomosis itself.

Pouch vaginal fistula

This is a devastating complication which has been reported in 5-15% of females undergoing the operation. Pouch vaginal fistula can present early in the post-operative course or late after closure of the ileostomy. It may be delayed for as long as 15 years. When closing the ileostomy, it is essential to have a pouchogram and also essential formally to examine the vagina under anaesthetic immediately before proceeding to exclude a hitherto unrecognised fistula.

Pouch vaginal fistula can be divided into high and low. These levels relate to the relationship of the internal opening to the anal sphincter. If there is a significant length of residual ano-rectal stump, the fistula will be well proximal to the sphincter and an abdominal revision involving de-

attachment of the anastomosis, a mucosectomy of the residual ano-rectal stump and an ileoanal anastomosis at the level of the dentate line should be carried out. Results of this pouch advancement procedure have been good with healing in 75-85% of patients.

Where the internal opening is near to the anal sphincter, an abdominal pouch advancement is unlikely to allow a satisfactory length of advancement below the opening. In these patients a local repair should be attempted. The strategy involves de-functioning in all cases, avoidance of damage to the sphincter, excision of the track and repair of the internal opening. There are two surgical routes that have been applied including transanal with advancement flap and transvaginal. The results are similar after either with successful closure being reported in around 55% of cases. Some of these patients have Crohn’s disease and none of these remained successfully closed at four years of follow-up in a large series of 68 patients of whom 8 (12%) had Crohn’s disease. At a median follow-up of 4.2 years, the overall success rate in this series was 65%. This result was achieved by repeated repair in 14 of the 45 patients having transvaginal closure who had failed on the first attempt.

Poor function

There are many causes of poor function including inflammation, mechanical obstruction, functional failure and sepsis. Sepsis has already been dealt with. Inflammation includes pouchitis but this is a relatively uncommon cause of poor function. In determining the reason for poor function, it is essential to investigate the patient formally by history, examination and special investigations including histopathology, contrast radiology, physiology tests and imaging such as MRI and CT. An examination under anaesthetic may also be indicated.

The most prevalent reasons for poor function other than sepsis include retained ano-rectal stump, outflow obstruction by stricture or the distal ileal segment of the S-reconstruction, small reservoir and weak anal sphincter. Patients with retained rectum have in effect had an inadequate operation. This is often the result of failure to achieve an adequately distal stapled ileoanal anastomosis for technical reasons. Persisting inflammation in the residual rectal stump leads to local symptoms of bleeding, urgency and burning. Such patients have an evacuation disorder with the frequent passage of small volume stool. The residual rectal stump is still at risk of developing carcinoma. When such a patient is sufficiently symptomatic, a revision with advancement of the ileoanal anastomosis after resection of the rectal stump is indicated. In patients with stricture or an obstructing distal ileal segment, the same operation in principle is employed. There is now sufficient information in the literature reporting the results of such major salvage. Successful outcome is around 65% to 70%24,25,26,27.
Pouchitis

Pouchitis must be histologically verified. It cannot be diagnosed on the basis of symptoms and macroscopic features. It is an uncommon cause of poor function and comprises only about 10% of failures. It is therefore an uncommon reason for excision of the reservoir. Pouchitis does not respond to simple de-functioning. Furthermore when the condition is treated by excision of the inflamed reservoir and construction of a new one, inflammation will recur. There is therefore no indication for major salvage surgery in pouchitis.

CONCLUSION

Salvage surgery should be carried out where failure is threatened. It should be applied after full clinical evaluation of the patient to define the reason for impending failure. Salvage surgery is most successful in patients with a localised mechanical problem particularly mechanical outflow obstruction. It should be offered to patients with pouch-vaginal fistula. At the present time it is not possible to know how effective salvage surgery is for patients with pelvic sepsis. For those with abdominal fistulation more proximal, it is successful in most patients.

The patient should be brought fully into the decision-taking process. Information on failure and morbidity of any proposed salvage procedure should be fully discussed. The morbidity of pouch excision should also be introduced into the argument. Ultimately the patient must make his or her choice as to whether a salvage procedure should be attempted or whether excision of the pouch is preferable.

REFERENCES


