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ASPECTS OF TREATMENT*

The management of acute colonic diverticulitis with suppurative peritonitis

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Summary

With improvement in the medical management of diverticular disease, perforation has become the most common indication for surgical intervention. It is a source of considerable morbidity and mortality and consequently has provoked a considerable and controversial challenge for surgeons. We are proposing that all patients found to have purulent peritonitis secondary to perforating diverticulitis at laparatomy, should be managed initially by a defunctioning transverse colostomy, drainage and the administration of appropriate antibiotics. Subsequent management should consist of simple closure of the colostomy following a check barium enema and the commencement of a high fibre diet. We substantiate this by reporting 20 cases from Dudley Road Hospital and 20 others mentioned in the current literature.

Introduction

Traditionally, perforated diverticulitis with purulent peritonitis has been managed by a standard three stage procedure: transverse loop colostomy; resection of the affected bowel; closure of the colostomy.

More recently there is a tendency to reduce this to two stages either by combining resection of the diseased segment of bowel with closure of the colostomy or by performing a Hartmann procedure at the initial laparotomy. Some would emphasise the importance of excision or exteriorisation of the involved bowel in the treatment of perforated colonic diverticulitis (*1,8*). However, impressed with the results of treating diverticular disease with a high fibre diet introduced by Burkitt and Painter (*2*) in 1971, it was decided that it would be advantageous if those patients with a generalised purulent peritonitis secondary to acute perforated diverticulitis could be managed by a lesser procedure, as many of them are old and an extremely poor operative risk.

Patients and methods

Since 1977 we have managed these patients by establishing a defunctioning transverse loop colostomy using a Translet ostomy rod and bag (J G Franklin & Sons) in addition to toilet of the peritoneal cavity with normal saline and insertion of a tube drain into the pelvis. Intravenous fluids and antibiotics are administerd concurrently. Subsequently, having commenced a high fibre diet and following a check barium enema to confirm the operative diagnosis of diverticular disease, and to rule out the presence of a fistula or underlying neoplasm, the loop colostomy is simply closed and no bowel resection is performed.

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The Editor would welcome any comments on this paper by readers

* Fellows and Members interested in submitting papers for consideration for publication should first write to the Editor

We do feel, however, that all patients with faeculent peritonitis should have the affected bowel segment resected as a primary procedure and these cases are therefore excluded from this study. We reviewed the case notes of 114 patients who had an emergency laparotomy performed for acute diverticulitis at Dudley Road Hospital during the 10 year period 1971–81 and evaluated the management of those cases with proven suppurative peritonitis at laparotomy.

Results

Ten patients with generalised suppurative peritonitis have been managed by the above procedure. There were 8 males and 2 females whose ages ranged from 52 to 80 years (mean 60 years). All colostomies were closed within 3 to 6 months, except for one patient who was referred from another surgeon and whose colostomy was therefore not closed until 11 months after the first operation. There was no mortality in our group and 9 patients who have been followed up for 1 to 5 years (mean 4 years) remain symptom free.

Our 10 year review produced a further 58 cases with proven generalised suppurative peritonitis. The initial operative procedure and associated mortality is summarised in the Table.

TABLE *Surgical treatment of suppurative peritonitis due to perforated colonic diverticulitis, n = 58*

Procedure	*Number of cases*	*Number of deaths*
Transverse colostomy and drainage	43	6
Laparotomy and drainage only	4	1
Hartmann's resection	5	1
Caecostomy and drainage	2	–
Sigmoid myotomy (*3*) and drainage	1	1
Resection and primary anastomosis	3	2

Two patients died before resection of their sigmoid colon (Stage II) and two more died after resection. Three out of the 4 managed by laparotomy and drainage only, had to have a subsequent Hartmann's resection or transverse colostomy fashioned before the diverticulitis settled. Ten patients did not have their colostomy closed, 4 of these having had the diseased segment resected. A further 10 patients, who were not in our series, had their transverse colostomy closed without resection of any bowel. Their ages ranged from 41 to 87 years (mean 67) and some were

followed up for 7 years (mean 3 years) with no obvious deleterious sequelae.

Discussion

The incidence of diverticular disease of the colon has reached enormous proportions in Western society (*4*). Currently it affects 30 million Americans (*5*) and it is estimated that annually 300 000 of these patients will require surgery for the complications of colonic perforation (*6*). With the introduction of a high fibre diet (*2*) and consequent improvement in the medical management of diverticular disease, perforation has become the most common indication for surgical intervention (*7*). It is a source of considerable morbidity and mortality varying from 5% (*8*) to 45% (*9*) and consequently has provided a considerable and controversial challenge for surgeons.

In the 1940's, Smithwick (*10*) and Pemberton (*11*) emphasised the need for bowel resection prior to closure of a proximal colostomy because of the high incidence of recurrent diverticulitis. This was further advocated for similar reasons in the fifties and sixties (*12–15*). However, all patients included in these earlier reports who subsequently developed recurrent diverticulitis, were managed postoperatively by a low residue diet. Since the pioneer work of Burkitt and Painter in 1971 on a high residue diet (*2*), there have been no results published of colostomy closure without bowel resection. Painter (*16*) mentions a personal communication from de Jode who has closed eight colostomies without resection; follow-up ranged from 1–7 years (mean 3·8) with 7 patients well and one complaining of mild symptoms. He suggests that this method needs urgent assessment as it would reduce costs and morbidity. In 1969 the staged procedure was costed at 10 000 dollars in the US (*17*). While reviewing 211 cases managed by a staged procedure, Classen (*18*) found 12 patients who had their proximal colostomy closed without resection of the affected bowel and all have done well with no further complications of diverticular disease. Sixteen percent of this series never had their colostomy closed.

We would not agree with the advocates of drainage only in a generalised suppurative peritonitis (*19*) and think Painter (*16*) is correct when he suggests that there are sound theoretical grounds for establishing a colostomy. The absence of mortality or subsequent significant morbidity associated with our method of management, and with similar cases referred to in the current literature, would suggest that adaptation of this technique is justified. Apart from the shortened hospital stay with its enormous cost benefits, both operative procedures can be performed safely by relatively inexperienced surgeons. Another major advantage of this method of management is the greatly reduced risk of the older patients ending their days with a permanent colostomy.

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