

Obstructed left colon: one-stage surgery in a developing country

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Thirty-two consecutive cases of left-sided colonic obstruction are presented. Thirty cases were managed by primary resection and anastomosis without colostomy. No anastomotic leakage occurred. This procedure allowed significant conservation of material and personnel resources, with minimal patient morbidity.

Keywords: colostomy, colon, obstruction, carcinoma

Traditionally, emergency surgery on the left colon is aimed at achieving decompression; subsequent procedures deal with resection, anastomosis and closure of the colostomy. This practice, while orthodox, has several disadvantages. Multistage procedures incur increased hospital stay, operating time, medication, days spent away from work, and the burden of caring for a colostomy.

In addition, further constraints are experienced in developing countries. Poor patient education, frequent shortage of colostomy bags and inadequate toilet facilities make proper care of the colostomy difficult. Lack of operating time results in prolonged intervals for completion of the staged procedures, and cost in our setting is a critical and ever-present consideration.

In view of these factors, since 1984 we have prospectively adopted the practice of one-stage procedures for emergency surgery on the obstructed left colon. We thought it useful to present our experience.

Patients and methods

During the period from January 1984 to July 1989, a total of 32 emergency left colonic operations for obstruction were performed by the authors. Primary resection and anastomosis were carried out in 30 cases and in the remaining two cases colostomy was performed because primary repair was judged to be neither technically acceptable nor safe. The distribution of the cases is presented in *Table 1*.

In those patients undergoing primary resection and anastomosis, on-table colonic lavage was carried out. We initially adopted the conventionally described methods^{1,2}, but soon modified the technique as follows. Instead of a Foley catheter, a 36 Fr chest tube was introduced via an enterotomy in the terminal ileum and was secured by a purse-string suture. The thoracic catheter was then threaded through the ileocaecal valve and fed into the ascending colon. Suction was applied

before irrigation; this procedure evacuated most of the liquid faeces and gas. Antegrade lavage with normal saline was then carried out, and effluent was collected as usual through corrugated anaesthetic tubing into a bucket. On completion of lavage, the chest tube was removed and the enterotomy was closed.

Using this method, on average, 2 litres of saline were required for adequate lavage and the mean time required was 18 min.

Following resection, anastomosis was carried out using a two-layer inverting technique with continuous 2/0 chromic catgut. No drains were used and all patients were covered with broad-spectrum antibiotics during operation.

Results

There were two deaths, no clinical anastomotic leakages, and two superficial wound infections without deep disruption. The mean period of hospital stay was 7 days. Deaths occurred in one patient with faecal peritonitis with gut perforation in whom a colostomy was performed, and in a 78-year-old woman with sigmoid volvulus and gangrenous gut; 30 h after operation, following resection of the volvulus and primary anastomosis, she died suddenly. Post-mortem showed that death was due to myocardial infarction; the anastomosis had remained intact.

Discussion

In emergency surgery on the left colon, the practice of colostomy construction followed by a staged procedure had been mandatory until the early 1980s. Although

Table 1 Diagnosis in 32 cases of left colon obstruction

Diagnosis	n
Carcinoma	29
Sigmoid volvulus	2
Intussuscepting polyp	1

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sporadic reports of primary resection and anastomosis can be traced back to the 1950s^{3,4}, the technique never gained widespread acceptance because of the belief that colonic faecal loading significantly contributed to anastomotic leakage^{5,6}. However, intraoperative colonic lavage^{1,2} permitted cleansing of the loaded colon at surgery and primary anastomosis. Using this method several authors have attested to the safety of one-stage procedures in emergency surgery on the left colon⁷⁻⁹.

Our series is consistent with this, since there were no anastomotic leakages and the mortality rate was 6%. One-stage procedures, though considered a selective form of management⁷, were possible in 30 of 32 patients in our series (94%). This is a higher proportion than in other series^{7,10}, possibly because of the low incidence of perforation and an aggressive attitude to one-stage surgery in our setting. Our routine of applying suction through a wide-bore chest tube not only decompresses the dilated colon but also removes much of the thick faeculent bowel content. Irrigation then takes much less time (18 min) and uses much less fluid (2 litres) than by using the conventional Foley catheter technique (39 min and 5.3 litres respectively)⁷.

Owing to limited operating time, the burden of a colostomy must be carried in our hospital for an average of 14 months, before all stages are completed. Colostomy closure, although a simple procedure, may be associated with significant morbidity¹¹. Fielding *et al.*¹⁰ have shown that obstructing carcinoma distal to the splenic flexure carried a 14% mortality rate for the one-stage procedure, compared with 35% for the conventional three-stage technique.

One-stage surgery on the obstructed left colon therefore achieves the objective of definitive therapy,

without the inconvenience of a colostomy, with far less morbidity and mortality, and the concurrent conservation of our limited resources. In a developing country such as ours, we now regard one-stage surgery as the procedure of choice in the management of the obstructed left colon.

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