HARTMANN'S PROCEDURE REVISITED

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ABSTRACT

Between July 1991 and June 1999 out of 176 patients undergoing colonic surgery (elective and emergency), Hartmann's procedure was performed in 63. There were 39 males and 24 females. Mean age was 43 years (range 12 to 81). To assess the utility of Hartmann's procedure the documents of all these 63 patients were retrospectively analysed. In 47 bowel continuity was reestablished. The over all mortality in first stage operation (Hartmann's procedure) was 12.7% and mortality in the second stage procedure (reestablishing bowel continuity) was nil. Complication rate was drastically less in second operation. The authors conclude that Hartmann's procedure is safe and effective while dealing with colorectal pathologies as resection and primary anastomosis is fraught with danger.

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KEY WORDS :Colonic surgery; Hartmann's procedure.

Introduction

In 1923 Henri Hartmann a French Surgeon; performed this operation in a patient of recto-sigmoid cancer as an alternative to abdomino-perineal resection to reduce morbidity. Eight years later he reported 34 cases of this procedure with 8.8% mortality. However, this procedure gained popularity much later. At present this procedure can be performed in a wide variety of elective and emergency situations like ulcerative colitis, recto-sigmoid cancers, sigmoid volvulus and rectal injuries [1,2].

The purpose of this study is to critically evaluate our experience with this procedure over the last 8 years and to assess the morbidity and mortality associated with the two stages of this procedure and compare the results with other studies.

Material and Methods

Between July 1991 to June 1999, 176 patients underwent colonic surgery and their case records were retrospectively analysed. Hartmann's procedure was performed on 63 of these patients (28 as elective and 35 as emergency). There were 39 males and 24 females, mean age 43 (range 12-81) years. The indications for surgery are detailed in Table 1.

Hartmann's procedure classically entails division of the rectosigmoid at the level of the peritoneal reflection closure of the distal rectal stump and an end colostomy. However in 33 patients of ulcerative colitis and one patient of familial polyposis coli, a total colectomy, closure of the distal rectal stump and an end ileostomy was done.

Results

8 patients (12.7%) died in the postoperative period. 4 (50%) of these had rectosigmoid malignancy. 2 (25%) patients had a gangrenous sigmoid volvulus with septicemia. 1 patient with anasto-

TABLE 1

Indications for surgery in patients undergoing Hartmann's procedure (n=63)

Indication	Elective	Emergency	Total
Ulcerative colitis	24	09	33
Familial polyposis coli	01	-	01
Recto-sigmoid malignancy	-	11	11
Sigmoid volvulus	-	07	07
Traumatic perforation	-	05	05
Anastomotic dehiscence	-	03	03
Recto-vaginal fistula	01	-	01
Conversion of loop colostomy	02	-	02

motric dehiscence and one 12 year young child with familial polyposis coli suffered sudden death on the first postoperative day.

Of 55 survivors, 47 patients had their bowel continuity restored at second stage. 4 patients with disseminated carcinoma of the recto-sigmoid succumbed to their disease before they could undergo restoration of bowel continuity. 2 patients of ulcerative colitis refused second stage procedure and 2 were lost to follow up. There were no postoperative deaths following second stage procedure.

Complication rate was higher following first stage procedure. Complications encountered are listed in Table 2. The duration between the first and second operation ranged from 103 to 187 days with a median of 134 days.

Discussion

One stage total proctocolectomy, J pouch ileo-anal anastomosis and distal mucosectomy in patients with ulcerative colitis, even in the elective situation is associated with high risk [3]. The same holds good for a left sided obstructive colonic lesion. The problem gets compounded in Indian setting where majority of these patients have hypoalbuminemia and reach late for

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TABLE 2
Complications after Hartmann's procedure

Complications	No. of cases	Percentage
<i>First stage (n=63)</i>		
Wound infection	13	23
Pulmonary	7	14
Pelvic abscess	3	5
Intestinal obstruction	2	3.5
Para-colostomy hernia	1	1.75
<i>Second stage (n=47)</i>		
Wound infection	2	4.2
Fecal incontinence	1	2.1
Incisional hernia	2	4.2
Anastomotic stricture	1	2.1
Pelvic abscess	1	2.1

treatment. The authors when faced with the above situation always resorted to the Hartmann's procedure.

We have retrospectively analysed our experience over a period of eight years and have compared it with other series reported in literature. Unlike the Western world, where the main indication for a Hartmann's procedure is complicated colonic diverticulitis [4], the main indication in our series was first stage procedure for ulcerative colitis be it in the elective or emergency setting. Rectosigmoid malignancy was the next common indication which was also the case in other reported series. Sigmoid volvulus leading to gangrene, iatrogenic rectal perforation and anastomotic dehiscence were the other indications, similar to other reported series [5-7].

This procedure helps to tide over the emergency in patients with ulcerative colitis where a total proctocolectomy and primary anastomosis is fraught with danger of anastomotic leaks as majority of these patients are too sick, nutritionally crippled with low serum albumin (< 2.5 mg%) and are steroid dependent. It holds a significant advantage in the obstructed or perforated left colon by eliminating the source of contamination and avoiding primary anastomosis in an inflamed and oedematous bowel and subsequently allowing the possibility of restoration of bowel continuity with safety [8].

Overall mortality in our series was 12.7% as compared to the reported mortality of 4 to 30% [9]. Of the 8 patients who died postoperatively seven had preoperative septicemia and resection of the rectosigmoid could not salvage the situation. The 12 year old boy with familial polyposis coli who underwent a total colectomy and Hartmann's procedure had sudden death 20 hours after surgery, probably due to pulmo-

nary embolism.

Pulmonary and renal complications were attributable to the age and preoperative septicemia. On table, clonic lavage and primary colonic anastomosis is now being adopted more and more even in the emergency situation with good results [10]. The authors have a limited experience of this technique. 13 of the 57 surviving (23%) patients developed wound infection which is comparable to experience of other series (25-60%) [11]. Rectal stump leak has been reported in upto 30% of patients postoperatively [11]. We did not encounter this complication. 2 patients had small bowel obstruction due to inflammatory adhesions and were managed with re-exploration and adhesiolysis. This complication can occur following laparotomy for any indication and is not specific to Hartmann procedure.

Restoration of bowel continuity was also associated with complications but to a significantly lesser extent compared to first stage of the procedure. Only 7 of the 47 patients (15%) developed a complication and one of them was fecal incontinence in a patient with ulcerative colitis requiring reversion to an end ileostomy. This compared well with other reported series [12,13]. This low incidence of complications following restoration of bowel continuity could possibly be firstly, due to surgery being always performed in the elective situation and secondly, the time gap between the two procedures which helped us in preparing the patients better.

In conclusion, the authors feel that Hartmann's procedure is safe and effective in dealing with colorectal pathologies. The procedure if performed carefully is associated with significantly lower mortality and morbidity compared to a radical excision and or primary anastomosis. The bowel continuity can be restored later at an appropriate time, with negligible morbidity and mortality.

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