

# SURGERY FOR INFLAMMATORY BOWEL DISEASE IN SINGAPORE

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## ABSTRACT

*Inflammatory bowel disease is uncommon in Asians and reports of surgery in these populations are rare. Eighty-two patients with inflammatory bowel disease were seen in the Department of Colorectal Surgery over a five-year period (1989-1994). Twenty-three patients underwent surgery for their disease. There were 12 males and 11 females with 16 Chinese, 4 Indians and 3 Malays. Twelve had Crohn's disease and 11, ulcerative colitis. The majority of patients with Crohn's disease had emergency surgery for bleeding, perforation, abdominal masses and intestinal fistulae. Fifty percent of these had the diagnosis made intraoperatively or post-operatively. Surgery for ulcerative colitis was indicated because of multiple relapses, non-response to medical treatment, side effects of therapy or malignant change. The median age at surgery of patients with Crohn's disease and ulcerative colitis was 39 years (range 24 - 84) and 40 (range 18 - 60) respectively. The median follow-up was 22.4 months (range 9 - 50). The results of surgical therapy in these patients show that surgery when indicated can be done with minimum morbidity and mortality.*

**Keywords:** inflammatory bowel disease, Crohn's disease, ulcerative colitis, Singapore

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## INTRODUCTION

Inflammatory bowel disease is uncommon in Asians<sup>(1-4)</sup>. Reports of surgery in these populations are therefore rare. There has been an increasing incidence in the last decade<sup>(3,4)</sup> but the reasons remain unclear.

We report our experience with the management of inflammatory bowel disease in the Department of Colorectal Surgery over a five-year period between 1989 and 1994.

## MATERIALS AND METHODS

The case records of 82 patients diagnosed with inflammatory bowel disease and stored in the Department of Colorectal Surgery computer database between 1989 and 1994 were analysed.

The diagnosis in each case was based on a combination of typical clinical, endoscopic and histological criteria. The extent of the disease was assessed with colonoscopy and biopsies in all the cases. There were 58 cases of ulcerative colitis and 24 cases

of Crohn's disease. Of these, 23 patients had surgery for their inflammatory bowel disease and formed the cohort studied.

The presenting complaints at the time of surgery, diagnosis and extent of disease, indication for surgery, operative procedure, post-operative complications, post-operative physiological function and follow-up were analysed.

## RESULTS

A total of 23 patients underwent surgery for inflammatory bowel disease. Twelve had Crohn's disease and 11 had ulcerative colitis. The median age for the Crohn's patients was 39 years (range 24 - 84), while that of the ulcerative colitis was 40 years (range 18-60). There were 4 males and 8 females with Crohn's disease and 7 males and 4 females with ulcerative colitis. The patients were followed-up for a median of 22.4 months (range 9 -50).

Nine (75%) of the Crohn's group had emergency surgery; 2 for severe recurrent gastrointestinal bleeding, 2 for tender right iliac fossas with ileocecal Crohn's disease, 2 patients for peritonitis due to a local perforation of the rectum and toxic megacolon respectively and 3 patients for enteric fistulae (Table I).

Three patients with Crohn's disease had elective surgery; one

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Table I - Crohn's disease

Indications	Operative procedure	Outcome
<i>Emergency</i>		
1. Bleeding	Right hemicolectomy	Alive & well
2. Bleeding	Anterior resection	Alive & well
3. RIF mass	Right hemicolectomy	Alive & well
4. RIF mass	Right hemicolectomy	Alive & well
5. Perforated rectum	Abdomino-perineal resection	Alive & well
6. Toxic megacolon	Laparotomy	Died
7. Enteric fistula	Resection	Alive & well
8. Enteric fistula	Repeated resection	Alive & well
9. Enteric fistula	Right hemicolectomy	Alive & well
<i>Elective</i>		
10. Crohn's colitis	Colectomy & ileo-rectal anastomosis	Alive & well
11. Perianal disease	Fistulotomy	Alive & well
12. Crohn's fissure (Previous lateral sphincterotomy)	Anal advancement flap	Alive & well

**Table II – Ulcerative colitis**

Indication	No of patients	Operative Procedure	Outcome
Multiple relapse	3	Restorative proctocolectomy	Alive & well
Multiple relapse	3	Restorative proctocolectomy with defunctioning stoma	Alive & well
Multiple relapse	3	Restorative proctocolectomy	Alive & well
Benign stricture	1	Restorative proctocolectomy	Alive & well
Adenocarcinoma	1	Restorative proctocolectomy	Alive & well

patient with symptomatic Crohn's colitis underwent an elective total colectomy and an ileorectal anastomosis, 2 patients with perianal Crohn's disease had elective perineal surgery (Table I).

All 11 patients with ulcerative colitis had restorative proctocolectomy. Three of these had semi-elective surgery and underwent three stage operations. Four other patients had defunctioning stomas with their restorative proctocolectomy. Four others underwent a single stage restorative proctocolectomy. Of these patients, 9 were operated on for multiple relapses and continuing symptoms despite being on optimal medical therapy. Two patients were found to have strictures on barium enema. One had a benign stricture in the splenic flexure while the last patient had an adenocarcinoma in the rectum. All are well on follow-up (Table II).

Bowel function for the patients who had undergone restorative proctocolectomies were assessed for continence. All 6 patients had good bowel function and were fully continent. The median number of stools per day was 5 (range 3 - 7) at a median follow-up of 24 months (range 4 - 57). Only one patient required imodium once a day. All the patients could delay defecation by at least 15 minutes.

## DISCUSSION

Inflammatory bowel disease is uncommon in Singapore<sup>(2,4)</sup>. It is however being seen in increasing numbers. This may represent either or both an increasing awareness and/or a real increase in the incidence of the disease. In other regions in the world, the rate has remained fairly steady at 2-7 per 100,000 population<sup>(5)</sup>. The incidence of Crohn's disease is less than that of ulcerative colitis. However, the number of patients with Crohn's disease and ulcerative colitis that were treated surgically in this series is approximately equal, implying a relatively higher incidence of Crohn's patients requiring surgery. This may be a true increased incidence or a result of referral patterns in the department.

The picture for the ulcerative colitis is similar to the Western population, with most of the cases being subjected to elective or

semi-elective surgery following a protracted clinical course with multiple relapses<sup>(6)</sup>. On the other hand, Crohn's disease presented with complications like massive bleeding uncontrolled by medical treatment, perforations, fistulation or obstruction due to mass effects resulting in emergency operations in 75% of the patients in this series. In addition, the diagnosis was not ascertained pre-operatively in half of these cases. The low prevalence of the disease may be the cause of the disease being detected at a later stage.

The surgical treatment of choice for ulcerative colitis was a restorative proctocolectomy<sup>(6)</sup>. Debilitated patients with poor pre-operative conditions were subjected to a staged procedure with total colectomy as an initial procedure. When the patient's general condition improved, usually about six weeks after the initial surgery, they underwent a restorative proctectomy. Ileostomies were used selectively to defunction the ileal pouch-anal anastomosis. These were closed six weeks later following radiological confirmation of an intact pouch. All patients were continent with minimal nocturnal soilage and good anal control. The median number of bowel movements of 5 (range 3 - 8) per 24 hours with a median of 1 (range 0 - 3) bowel movement at night compares well with that reported by other centres. All patients were satisfied with the result of their surgery.

## CONCLUSION

Inflammatory bowel disease exists in Singapore. Although the incidence appears to be low compared to Western series, inflammatory bowel disease may be on the increase. A high index of suspicion is needed in order to diagnose these patients early, especially those with Crohn's disease, where an emergency presentation occurs in the majority. Surgery when indicated can be done with minimum mortality and morbidity.

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