ORIGINAL ARTICLE

Surgical management of inflammatory bowel disease: A low prevalence, developing country perspective

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Abstract

Objective: To determine the outcomes of surgical management of inflammatory bowel disease.

Methods: The retrospective case series was conducted at Aga Khan University Hospital, Karachi, and comprised medical record of adult patients operated between January 1986 and December 2010 for inflammatory bowel disease. Outcomes consisted of complications till last follow-up and 30-day mortality (disease or procedure related). Functional status of patients with ileal pouch was determined via telephone. SPSS 16 was used to analyse data.

Results: Of the 36 patients whose records were reviewed, 21(58%) were males, and body mass index was less than 23 in 34(91%). A total of 27(75%) patients underwent elective surgery for their condition. Ileal pouch was formed in 9(25%). Overall mortality was 14(38.8%). Overall incidence of complications was 26(72%), with wound infection being the most common early morbidity in 11(30.5%). Late morbidity included pouchitisin 4/9 (44.9%) and strictures 2/36 (5.5%).On telephonic follow-up, 6 of the remaining 7patients (85%) with ileal pouch were satisfied with the functional results of the procedure.

Conclusion: The retrospective case series represents results from a developing country with low prevalence of inflammatory bowel disease and hence limited experience.

Keywords: Inflammatory bowel disease, Morbidity, Mortality, Ileal pouch, Anal anastamosis. (JPMA 66: 247; 2016)

Introduction

Crohn's disease (CD) and ulcerative colitis (UC) are two main disease entities of a group of idiopathic inflammatory intestinal conditions that collectively constitute inflammatory bowel disease (IBD). Both conditions have overlapping and distinct clinical and pathological features, but pathogenesis is incompletely understood. Genetic and environmental factors are postulated to cause dysregulation of intestinal immunity, leading to gastrointestinal injury.[1]

There is paucity of valid epidemiological studies on IBD from Asian countries and the results are variable. The incidence of UC ranged from 1.0 to 2.0 per 100000 person-years. The incidence of CD ranges from 0.5 to 1.0 per 100000 person-years. The prevalence of UC has ranged from 4.0 to 44.3per 100000 and that of CD from 3.6 to 7.7 per 100000. UC appears to be more common than CD in Asia. There is no epidemiological study from Pakistan.

IBD is a chronic, intermittent disease. In general, symptoms depend on the segment of the intestinal tract involved. It can present with cramp-like abdominal pain, bloody diarrhoea, and tenesmus. Some cases may present with a fulminant course marked by severe diarrhoea, fever, leucocytosis, and abdominal distension associated with various extra-colonic manifestations.

Therapy for IBD is a rapidly evolving field, with many new biologicala gents under investigation. Currently used drugs are amino salicylates, corticosteroids, thiopurines, methotrexate and infliximab.[2-4] Currently there is no cure for CD; therapy is directed at achieving and maintaining remission, and to achieve optimum quality of life. The approach is similar with UC, although UC technically can be "cured" by surgical removal of the large intestine. Surgery is generally reserved for patients with intractability, colorectal cancer, toxic megacolon, massive bleeding or perforation.

IBD renders patients at risk of several complications, including colorectal cancer (CRC). It is believed that this increased risk is a result of persistent inflammation of the colon. Risk factors for the development of CRC in the setting of IBD include disease duration, anatomic extent of disease, age at time of diagnosis, severity of inflammation, family history of colon cancer, and concomitant primary sclerosing cholangitis.[5]

There is limited data available from Pakistan regarding surgical management of this important clinical condition. The current study was planned to determine the outcomes of surgical management of IBD at a tertiary care teaching hospital of Pakistan.

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Patients and Methods

The retrospective case series was conducted at Aga Khan University Hospital (AKUH), Karachi, and comprised medical record of adult patients operated between January 1986 and December 2010 for IBD. International Classification of Diseases (ICD) code for IBD was run to retrieve the charts of patients. Patients with missing records and surgery done outside AKUH were excluded.

The charts were reviewed by a General Surgery Resident for socio-demographic, surgical and outcome variables. Since these patients are followed regularly and for long term, their records are not purged as per institutional policy. Outcomes consisted of complications till last follow-up and 30-day mortality either disease or procedure-related. Patients with ileal pouch were contacted via telephone (since this procedure was performed in recent years) to inquire whether or not they were satisfied with the functional outcome. Satisfaction was defined as frequency of stools less than four per day and good continence.

SPSS 16 was used to analyse the data. Descriptive analysis of baseline characteristics was done. Categorical variables like gender, comorbids and outcomes were analysed as proportions. Continuous variables like age, body mass index (BMI) and duration of surgery were analysed as means ±standard deviation.

Table: Socio-demographic and clinical characteristics of patients (n=36).

Variable	Values
Age (years)	45±15
Body mass index (BMI)	22.2±5.8
≤19	18 (49%)
19.1-23	16 (42%)
≥23.1	02 (9%)
Gender	58% (21)
Comorbids	
Diabetes mellitus (DM)	19.4% (7)
Hypertension (HTN)	25% (9)
Asthma	8.2% (3)
Colorectal Cancer	15 (41.6%)
Incidental diagnosis	1
Preoperative diagnosis	14
Indication for surgery	
Bleeding	2 (5.5%)
Perforation	4 (11%)
Obstruction	5 (13.8%)
Tumor	3 (8.2%)
Intractability	14 (38.8%)
Others	10 (27.6%)
Emergency surgery	9 (25%)
Surgical procedure	
Ileal-pouch Anal Anastamosis	09 (25%)
Total colectomy+ileostomy	13 (36%)
Segmental Resection+ileostomy	03 (08%)
Segmental Resection+anastamosis	11 (31%)

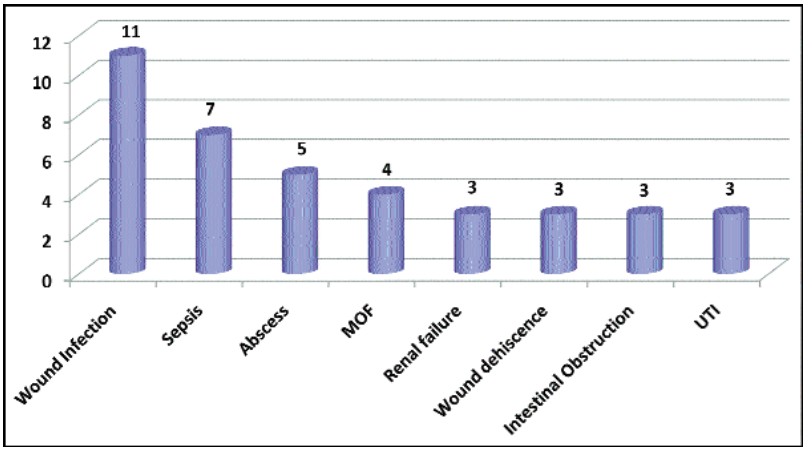
Results

A total of 47 patients underwent surgical treatment for IBD during the study period, records of 36(76.5%) were included after leaving out 11(23.4%) with missing data/files. There were 21(58%) males; BMI was less than 23 in 34(91%); 10(28%) patients were operated for CD and 26(72%) for UC (Table).

The most commonly reported symptom at the time of presentation was abdominal pain in 28(77.7%) patients, followed by diarrhoea 25(69%) and haematochezia 23((64%). Additionally, patients commonly presented with constitutional symptoms such as fatigue in 18(50%), fever 13(36.1%), weight loss 13(36.1%) and loss of appetite 11(30.5%). Associated conditions were anaemia in 18(50%), anxiety 5(13.8%) and depression 5(13.8%). The mean duration of symptoms prior to diagnosis was 5±4.3 years, whereas after diagnosis it was 7.5±3.6 years. CRC was diagnosed in 15(41.6%) patients, and 14(93.3%) of them had UC.

Medical treatment consisted of sulfonamides in 7(19.4%), aminosalicylates 16(44.4%) and immunosuppressive therapy using prednisone 15(41.6%) or prednisone in combination with another immunosuppressive drug 6(16.6%).

A total of 27(75%) patients underwent elective surgery for



MOF: Major osteoporotic fractures
UTI: Urinary tract infection.

Figure: Early post-operative complications (n=36).

their condition and 9(25%) underwent emergency surgery. Most common procedure was total colectomy with ileostomy 11 (36%) followed by segmental resection and ileostomy 13 (31%). Ileal pouch was formed in 9(25%) patients.

Overall mortality was 14(38.8%); 8(57%)expired during post-operative hospital course, and 6(43%)expired within 30 days of surgery after being discharged from hospital. Four (28.5%) patients expired within one week of emergency surgery (perforation, megacolon or massive bleeding) and were American Society of Anesthesiologists (ASA) grade III or IV. Overall incidence of complications was 26(72%) (Figure) and wound infection in 11(30.5%) was the most common cause of early morbidity. Late morbidity included pouchitis in 4/9(44.4%) and strictures in 2/36(5.5%). Mean hospital stay was 16 days. Two (22.2%) out of 9 patients with ileal pouch expired within two weeks of surgery due to multiorgan failure secondary to septicaemia. On telephonic follow-up, 6(85%) of seven patients who survived an ileal pouch were satisfied with the functional results of the procedure.

Discussion

This retrospective case series represent results from a tertiary care centre of developing country with low prevalence of IBD. Most patients underwent resection and anastamosis (or ileostomy); while 25% underwent ileal pouch-anal anastomosis (IPAA). Overall morbidity and mortality was 72% and 38.8%, respectively, which is much higher than internationally reported data. One study reported a morbidity of upto 50%,[6] most common of all complications was pouchitis (50%) followed by intestinal obstruction (25%). Another study considered total abdominal colectomy with end ileostomy a safe procedure in the emergent setting with a post-operative complication rate of 23%-33% and low mortality in the absence of a perforation (0%-4%).[7] As far as IPAA is concerned, it's a low-mortality procedure (upto 1%); however, the morbidity is considerable i.e. upto 50%.[7] High morbidity and mortality in our study may be attributed to small sample size, limited experience of managing such cases requiring multidisciplinary approach, immunosuppression due to drugs and malnutrition.

The incidence of UC has been increasing in previously low-incidence areas i.e. eastern Europe, Asia, and developing countries, including Pakistan. There are other socio-demographic differences between east and west; extra-intestinal disease reported from Pakistan is less than that reported from the West. Fistulisation is less common in India and Pakistan, and the age at presentation of CD is a decade later in India than in the West.[1]

Approximately 25%-35% of UC patients ultimately require surgery for either a complication of the disease or inadequate control of symptoms.[3] While most of these surgeries can be done in the setting of an elective operation, a minority will require urgent treatment. Indications for emergent operation for UC include massive haemorrhage, toxic colitis, toxic mega-colon, and intestinal perforation. Total abdominal colectomy and end ileostomy is the procedure of choice in emergency settings,[8] whereas most frequent elective procedure performed for UC is the restorative proctocolectomy with IPAA.[9]

It is estimated that between 70% and 90% of Crohn's patients will need a surgical intervention at some point during their disease.[10] Operative intervention for CD is indicated when medical therapies fail to adequately alleviate symptoms, or when patients develop one of several complications of the disease; specifically, these include fistula, abscess, obstruction and malnutrition. Persistent symptoms that compromise quality of life despite several months of aggressive medical management, or recurrent symptoms following repeated attempts to taper aggressive therapies, are well-described indications for surgery. Adverse reactions to medical therapies, most often steroids, sometimes prompt a more aggressive surgical approach to the control of CD symptoms as well.[11]

Resection is the most commonly performed surgical procedure for small bowel CD.[12] In general, the pan-enteric nature of CD has resulted in a surgical philosophy of conservatism. Recurrence rates tend to increase with the passage of time and CD patients may eventually require multiple resections, each increasing the risk of short-bowel syndrome and its associated metabolic morbidities. Recurrence rates following resection remain high.

IBD patients need to be hospitalised either for surgery or for refractory disease and hospitalisation accounts for at least half of the direct costs attributable to IBD. About 70%-75% of CD patients require surgery for symptomatic relief; surgery is rarely curative. Contrarily, 25%-30% of UC patients may require surgery, and surgery is considered curative for the disease. About 30% of those with total colitis require colectomy within 5 years.[1] This trend can also be observed in our study and out of 36 patients managed surgically, 26(72%) had UC and 10(28%) had CD. Most common indication in our setup was resistant medical therapy, which was found in 14(38.8%) patients followed by tumour (21%). Out of 36 surgeries performed, 9(25%) were emergency surgeries;

seven UC patients and 2 of CD.

In a retrospective review[13] of 173 patients who underwent total proctocolectomy with IPAA, median functional O¨ resland score 1 year after IPAA was 3 (range 0-11). Early postoperative complications were observed in 27% patients. After a median (interquartile range) follow-up of 6.5 (3.4 -9.9) years, 35% patients developed septic and/or obstructive complications and 46% patients had at least one episode of pouchitis. Pouch failure occurred in 5% patients.[13] In our study, 85% IPAA patients were satisfied with the pouch and 44% patients had at least one episode of pouchitis. Overall complications (early and late) were encountered in 72% patients.

Conclusion

The study represent results from a developing country with low prevalence of IBD and hence limited experience, which may have contributed to relatively higher morbidity and mortality. Objective functional outcome assessment of IPAA is required. Lack of proper documentation, retrieval of data and poor follow-up are major setbacks in our setting.

Ethical Approval: As per institutional policy of AKUH, retrospective reviews of files are exempted from ethical review committee approval.

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