



HISTOMORPHOLOGICAL DISTRIBUTION AND ENDOSCOPIC CORRELATION OF COLONOSCOPIC BIOPSIES IN RURAL NORTH INDIA

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ABSTRACT

Colonoscopy provides information on the natural history and complications of many lesions. Biopsy forceps provide the opportunity to obtain multiple samples for evaluating the pathogenesis of the disease. Pathologist plays an important role in the diagnosis and management of patients with colitis. It is further made use of for GI cancers that are amongst the commonest malignancies worldwide. This prospective study of 300 cases included colonoscopic biopsies received in the department of pathology. We found out of 300 cases, 237 were non-neoplastic, 12 cases were benign and 51 were neoplastic. Out of the non-neoplastic cases, maximum was ulcerative colitis (UC); followed by acute colitis and chronic colitis. The benign lesions included tubular adenoma and tubulo-villous adenoma. Amongst the malignant ones, moderately differentiated adenocarcinomas predominated. On endoscopic histopathological correlation, non neoplastic lesions, benign and malignant lesions correlated 71%, 100% and 88% respectively. Conclusion of the study advocated that comprehensive histopathological study of the colonoscopic biopsy specimens should be done in constant correlation with the clinical and colonoscopic procedures for follow up of inflammatory diseases like UC and CD as well as early recognition of carcinomas.

KEYWORDS : Endoscopic biopsy, Ulcerative colitis, Crohn's Disease

Introduction

Endoscopy owes its primitive beginning to Bozzini who, in 1806, developed his endoscope and then the flexible fibre sigmoidoscope was successfully used in 1963 (1). Colonoscopic inspection after colostomy as suggested by Deddish and only a few surgeons took up Fairweather in 1953. Blankenhorn described Trans intestinal intubation for diagnostic purposes in 1955. Since the beginning of the 1960s diverse endeavours have been made to uncover a manner of inspecting the total colon endoscopically (2). Biopsy forceps provide the opportunity to obtain multiple samples for the study, but physical limitations of the forceps restrict the sample to 1mm superficial pieces of the tissue (3). The aims and objectives of the study were to study histopathological spectrum of lower gastrointestinal biopsies, evaluate the overall frequency, age and sex distribution and to correlate them with endoscopic/clinical diagnosis.

Materials & methods

The present study included colonoscopic/endoscopic biopsies received in the institution's Department of Pathology. This prospective study included a 300 biopsies over a time period of five years. The inclusion criteria included patients presenting with ulcers, abnormal growths, precancerous conditions and tumours and lesions present at ileocecal junction and that up to rectum. Ethical clearance was taken from the concerned committee, brief clinical data was noted along with colonoscopic findings and presumptive diagnosis was made.

Results

In the current study, out of 300 cases the maximum cases were non-neoplastic comprising of 237 cases, 12 cases were benign and 51 were malignant. Out of these, the non-neoplastic/inflammatory cases, there were 156 males and 81 females. Number of male and female patients belonging to benign category were 9 and 3 respectively and these amongst the malignant category were 27 and 24 respectively. Out of total 237 non-neoplastic lesions maximum 81 cases were of UC with

a peak incidence in fifth decade and a clustering was also noted from third decade of life to fifth decade; second most common condition with 75 cases was reported to be acute colitis which had a peak incidence in fifth decade and case clustering similar to ulcerative colitis was noted; third most common condition was chronic colitis with 42 cases which had maximum cases in the third decade, with a somewhat flat incidence curve around fourth to sixth decade of life. Among the rest of the cases 12 were tuberculous colitis; CD, Cytomegalovirus (CMV) colitis and pseudo-polyps comprised of 6 cases each and 3 cases each of hyperplastic polyp, juvenile retention polyp and mucosal prolapse syndrome. (Table 1) Our study resulted in a total of 12 cases of benign lesions, including 6 cases each of tubular adenoma and tubulo-villous adenoma. 3 cases each of tubular adenoma and tubulo-villous adenoma were diagnosed in fifth decade; rest 3 cases of tubular adenoma in fourth decade and tubulo-villous adenoma in sixth decade.

Table 1. Non-neoplastic Lesions with Age Distribution

	0-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Total
ACUTE COLITIS	0	0	15	15	30	9	3	3	75
CHRONIC COLITIS	0	0	15	6	6	9	6	0	42
UC	3	6	18	21	24	9	0	0	81
CD	0	0	0	6	0	0	0	0	6
TUBERCULOUS COLITIS	0	3	0	0	0	6	3	0	12
CMV COLITIS	0	3	0	3	0	0	0	0	6
PSEUDO POLYP	0	0	3	0	3	0	0	0	6
HYPERPLASTIC POLYP	0	0	0	0	0	0	0	3	3

JUVENILE RETENTION POLYP	3	0	0	0	0	0	0	0	3
MUCOSAL PROLAPSE SYNDROME	0	0	3	0	0	0	0	0	3
TOTAL	6	12	54	51	63	33	12	6	237

The present study had a total of 51 malignant cases, as described in Table 2. Out of the 237 inflammatory/non-neoplastic cases, endoscopic correlation revealed that about only 71% of these cases only were endoscopically correctly predicted. Whereas benign lesions viz. tubular adenoma and tubulovillous adenoma were in concordance to their endoscopic findings but malignant lesions concurred only 88%.

Table 2. Malignant Neoplastic Lesions with Age Distribution

	21-30	31-40	41-50	51-60	61-70	71-80	81-90	Total
WELL DIFFERENTIATED ADENOCARCINOMA	6	6	0	3	0	0	0	15
MODERATELY DIFFERENTIATED ADENOCARCINOMA	3	0	6	3	6	0	3	21
POORLY DIFFERENTIATED ADENOCARCINOMA	0	0	9	0	3	3	0	15
TOTAL	9	6	15	6	9	3	3	51

Discussion

Colonic conditions like infections, IBD, polyps and colorectal tumours are lesions, which often require colonic biopsy for their conclusive diagnosis (2). In the present study, of the 237 cases diagnosed as non-neoplastic lesions, chronic colitis was found to be less prevalent than acute colitis. This outcome is contrary to studies performed by Flick *et al* and Dickinson *et al* (3,4). In our study, there were 51 patients (34.2% of inflammatory lesions) of ulcerative colitis. Dickinson *et al* (4) in their study of 74 cases included 11 (14.9%) cases of ulcerative colitis, whereas Flick *et al* (3) described 47(28.1%). Clustering of ulcerative colitis cases in the current study were noted between ages between 21 to 50 yrs with maximum number of cases between the age group of 41-50 yrs and a maximum number of these cases were males (59.3%), in attribution with Morson and he further described the diseases into three phases as active phase, resolving phase and phase of remission respectively (5). In continuation with inflammatory disorders; there were 2% cases of Crohn's colitis in sum with Tandon HD *et al* (6). 4% cases of ziehl neelson stain confirmed tuberculosis too were in sum with Tandon *et al* (6) and Bhargava *et al*(7). As far as malignant lesions are concerned, in this study, out of the 51 cases of malignancy, most of these cases (36 cases) presented with bleeding per anal associated with chronic diarrhoea as a major complaint. The current study articulates that adenocarcinoma is the commonest malignant tumour of the colon. These findings were in accordance with studies done by Ibrahim *et al* (8), Sudharshan *et al* (9), Makaju *et al*(10), Imperiale *et al* (11).

Table 3. Comparative evaluation of cellular differentiation of malignant lesions

Studies	Well differentiated	Moderately differentiated	Poorly differentiated	Total
Linares <i>et al</i> (2002) ¹³	101(47%)	98(45.5%)	16(7.5%)	215
Jonasson <i>et al</i> (2001) ¹²	198(16.5%)	845(70.1%)	162(13.4%)	1205
Ibrahim <i>et al</i> (2001) ⁸	97(52%)	61(32.8%)	28(14.9%)	186
Present study	15(29.4%)	21(41.2%)	15(29.4%)	51

As shown in table 3, in the present study when we subclassified the adenocarcinomas as well, moderately and poorly differentiated lesions, of the 51 cases, (29.4%) were well differentiated, (41.2%) as moderately differentiated and (29.4%) as poorly differentiated. This finding corresponded to studies conducted by Jonasson *et al* (12) but contrary to Linares *et al* (13) Pandey *et al* (14) and Ibrahim *et al* (8).

In the present study overall correlation for neoplastic lesions with endoscopic diagnosis was found to be better, 100% and 88% respectively for benign and malignant lesions. However, inflammatory/ non neoplastic lesions yielded 71% correlation with endoscopic diagnosis which was in concordance to studies done by Makaju *et al* (10) and Rajbhandari *et al* (15).

Conclusion

Colonoscopy coupled with biopsy is important in reaching a correct diagnosis and also may be used for follow up of inflammatory diseases like UC and CD, to define epithelial dysplasia in case of chronic colitis & that would help in the early recognition of carcinoma in such patients (16). Hence, colonoscopic biopsy has increased the role of pathologist in the analysis and treatment of diseases of large bowel, while scoring and maintaining a constant correlation with clinicians.

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