A STUDY OF SPECTRUM OF HISTOPATHOLOGICAL LESIONS IN COLON IN A TERTIARY CARE CENTRE IN SOUTH KARNATAKA

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ABSTRACT

BACKGROUND
Histopathological study of colonoscopic biopsies is a well-established and cost-effective diagnostic test for evaluation of colonic lesions. It also contributes significantly to the pre-operative investigation of patients with colonic lesions. The main objective of the study is to scrutinize all colonoscopic biopsies and to study the Histopathology of colonic lesions and the spectrum of various colonic lesions and their prevalence in patients presenting to tertiary care hospital in South Karnataka. A total of 150 colonoscopic biopsies was studied in a 2-year period in the Department of Pathology, K. S. Hedge Medical Academy.

METHODS
Patients presenting with symptoms of pain abdomen, chronic altered bowel habits, haematochezia were examined by flexible colonoscopy after receiving consent from the patient. Biopsy specimen were mounted on a filter paper, fixed in formalin (10% solution of formaldehyde) and then processed. Sections of 3–4 µ were mounted on a clean glass side and stained with haematoxylin and eosin (H&E) stain. Special stains like PAS, GMS, MTS, Ziehl Neelsen (ZN) etc., were used whenever indicated.

RESULTS
Age of the patients ranged from 3 years to 87 years with a mean age of 47.65 years. Majority of the patients were males (83 cases) with a male to female ratio of 1.23:1. Among 150 cases, 92 cases (61.3%) were non neoplastic lesions and 58 cases (38.7%) were neoplastic lesion. The ratio of non-neoplastic to neoplastic lesion was 1.58:1.

CONCLUSIONS
The incidence of colonic lesions is increasing in recent years with early onset of inflammatory bowel disease and colorectal neoplasm in relatively younger age group due to changing life style and dietary habits.

KEYWORDS
Colonoscopy, Neoplastic, Non-Neoplastic, IBID (Inflammatory Bowel Disease), Adenoma, Polyps, Adenocarcinoma

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BACKGROUND
An increased incidence of non-neoplastic lesions and colonic malignancy has been noted in recent years in relatively younger population. Colorectal cancer (CRC) is the third most common cancer in men (10.0% of the total cancers) and the second in women (9.4% of the total cases) worldwide and is a major cause of morbidity and mortality. CRC accounts for over 9% of all cancer incidences. It is the third most common cancer worldwide and the fourth most common cause of death. The incidence rate of CRC in native Indians has been rising slowly over many decades. The incidence of CRC in immigrant Indians living in the UK and USA have been increasing suggesting westernization of diet as the possible aetiology. Colonoscopy is an endoscopic tool used for the visualization and biopsy of the large intestine. It can be used as screening tool in patients who are at high risk of developing malignancy.

Study Design
The present study deals with histopathological study of colonoscopic biopsies. A total of 150 colonoscopic biopsies were studied in a 2-year period in the department of Pathology, K. S. Hedge Medical Academy.

Age and Sex Distribution
The age of the patient ranged from 3 years to 87 years with a mean age of 47.65 years. Majority of the patients were males accounting for 83 cases (55.33%) with a male to female ratio of 1.23:1.

METHODS
The presenting complaints of the patient were pain abdomen, bleeding per rectum, constipation, diarrhoea, vomiting and constipation. The most common complaint was pain abdomen and bleeding per rectum.

Hyperaemic mucosa was the most common colonoscopic finding with 46 cases (30.7%) followed by ulcer...
proliferative growth in 36 cases (24%), ulcers in 28 cases (18.7%), polyps in 21 cases (14%), normal mucosal study in 14 cases (9.3%) unhealthy granular mucosa and rectal prolapse in 3 cases (2%) and 2 cases (1.3%) respectively. Histological evaluation of 150 cases of colonoscopic biopsies was done. Non-neoplastic lesion accounted for 92 cases (61.3%) and neoplastic lesion accounted for 58 cases (38.7%). Patients with non-neoplastic lesions were relatively young with a mean age of 44.4 yrs., whereas patients with neoplastic lesions were elderly with a mean age of 52.81 yrs. Males were commonly affected accounting to 51 cases (55.4%).

Spectrum of Non-Neoplastic Lesions

Among 92 non neoplastic lesions, majority of the lesions were non IBD colitis- (colitis other than IBD) accounting for 50 cases.

<table>
<thead>
<tr>
<th>Lesions</th>
<th>Number of Cases</th>
<th>Percentage Among Non-Neoplastic Lesion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tuberculosis</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Microscopic colitis</td>
<td>2</td>
<td>2.2</td>
</tr>
<tr>
<td>Lymphocytic colitis</td>
<td>27</td>
<td>29.3</td>
</tr>
<tr>
<td>Eosinophilic colitis</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Acute nonspecific colitis</td>
<td>10</td>
<td>10.8</td>
</tr>
<tr>
<td>Chronic colitis</td>
<td>6</td>
<td>6.5</td>
</tr>
<tr>
<td>Acute on chronic colitis</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Pseudomembranous colitis</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Inflammatory bowel disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ulcerative colitis</td>
<td>28</td>
<td>30.4</td>
</tr>
<tr>
<td>Crohn’s colitis</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Indeterminate colitis</td>
<td>6</td>
<td>6.5</td>
</tr>
<tr>
<td>Solitary rectal ulcer</td>
<td>3</td>
<td>3.3</td>
</tr>
<tr>
<td>Angiodysplasia</td>
<td>1</td>
<td>1.1</td>
</tr>
<tr>
<td>Total</td>
<td>92</td>
<td>100</td>
</tr>
</tbody>
</table>

RESULTS

Among the IBD cases, 28(75.7%) cases were ulcerative colitis (UC), 3 cases (8%) were Crohn’s disease (CD) and 6 cases (16.2%) were indeterminate colitis (IC). 70% of the ulcerative colitis were seen in patients younger than 45 years, with slight male predominance. The most common clinical presentation was pain abdomen and bleeding per rectum. Colonoscopy of ulcerative colitis showed multiple ulcers affecting various parts of the colon with unhealthy mucosa and rectal hyperaemia, whereas patients with Crohn’s disease showed mucosal hyperaemia, cobble stone appearance and granularity.

Rectum and sigmoid colon were frequently affected site in ulcerative colitis constituting 11 cases (39.28%), whereas pancolitis was seen in 8 cases (28.57%). Crohn’s disease predominantly involved right side of the colon with hepatic flexure as the commonest site in our study.

Among 28 cases of ulcerative colitis, 26 cases (92.8%) were in active phase with ulceration, cystitis, crypt abscess and goblet cell depletion. Two cases were in the chronic phase with atrophic mucosa and reduction in number of crypts. Among the 28 cases 11 cases showed mild dysplasia, 4 cases showed moderate dysplasia. There were 3 cases of Crohn’s disease with ulceration and non-caseating granuloma formation.

Neoplastic lesions were seen in 58 cases among 150 cases studied. Age range of neoplastic lesions was 03-87 years. Majority of the lesions were in the age group of 50-60 years with a mean age of 52.81 years. The incidence was higher in males 32 cases (55.17%). Of the 58 neoplastic lesions, 23 cases (39.6%) were benign and 35 cases (60.4%) were malignant.

Benign Lesions

Among 23 (39.6%) benign lesions, Hyperplastic polypos were seen in 10 cases (17.3%), adenomatous poly in 9 cases (15.5%) and juvenile poly in 4 cases (6.9%). 10 cases (17.3) of hyperplastic poly were noted among 23 benign polyps. Majority of the polyps were seen in 40-50 yrs with a mean age of 43.8 yrs. and had a male predominance with male to female ratio of 1:2:1. Majority of the lesions were located in rectum. Microscopy showed abnormal retention of
cells with serration in the upper zone of crypt with proliferation in the lower zone of the crypt. Juvenile polyps were the most common polyp in paediatric age group in our study. Age group affected was 3-7 years. Females were more commonly affected with a male to female ratio of 1:3. All the juvenile polyps noted were solitary and was seen in rectum only. Microscopy of the mucosa showed ulceration of mucosa with varying size of the glands which were cystically dilated and lined by columnar mucin secreting epithelium. Stroma was oedematous with dense inflammatory infiltrate of plasma cells, neutrophils, lymphocytes and eosinophils. Adenoma was seen in 9 cases out of 58 neoplastic lesions. Adenomas were more common in the age range of 60-80 years with a mean age of 60.78 yrs. Majority of the adenomas were seen in males with male to female ratio of 2:1. Most of the patients had clinical features of bleeding per rectum. 80% of adenomas were located in the rectum followed by sigmoid colon (20%).

**Histological Types of Adenoma**

Adenomas are histologically divided into Tubular, Villous and Tubulo-villous.

- Tubular adenoma showed tubular architecture with back to back gland arrangement having stratification of lining epithelium with hyperchromatic nuclei, mitosis and mucin depletion.
- Villous adenoma showed elongated finger like branching fronds of dysplastic epithelium showing stratification of the lining epithelium with hyperchromatic nucleus and mitosis.
- Tubulo-villous adenoma is defined by the mixture of tubular and villous structures with villous component between 25% and 70%.

In our study, tubular adenoma was the most common type of adenoma seen in 4 cases (44.4%), followed by tubulo-villous adenoma 3 cases (33.4%) and villous adenoma in 2 cases (22.22%). 44.4% of patients with adenoma had associated colorectal carcinoma.

**Malignant Lesions**

35 cases (60.4%) of malignant tumours were noted among 58 neoplastic lesions, among which 34 cases (97.1%) were adenocarcinoma and 1 (2.9%) was Non-Hodgkin Lymphoma.

**Adenocarcinoma**

Majority of the patients affected are in the age group of 50-60 years with a mean age of 57.32 years (p value<.001). Males showed higher incidence of colorectal cancer as compared to females with male to female ratio of 1.69: 1. Majority of the cases (84%) had symptoms of bleeding per rectum and constipation followed by constipation alone in (14.7%).

Colonoscopy showed ulceroproliferative growth in 92% cases and rest of them had only ulcerative lesion. Rectum was the most common site of adenocarcinoma accounting for 24 cases (70.5%) followed by sigmoid colon, hepatic flexure with 3 cases each (8.82%), ascending colon 2 cases (5.8%), caecum and transverse colon with one case (2.9%) each.

**Histological Types of Adenocarcinoma**

Histologically, adenocarcinoma is further divided into conventional adenocarcinoma, mucinous adenocarcinoma and signet ring cell carcinoma. The criterion to include a tumour under mucinous category is the presence of mucin comprising more than 50% of tumour. Signet ring cell carcinoma is defined by the presence of more than 50% tumour cells with prominent intracytoplasmic mucin.

Among 34 cases of adenocarcinoma 29 cases were conventional adenocarcinoma (85.3%), followed by mucinous adenocarcinoma 4 cases (11.8%), one case of signet ring cell carcinoma (2.9%).

Conventional adenocarcinoma is divided into 4 grades based on degree of differentiation of tumour:

- Well differentiated adenocarcinoma exhibits glandular structure in >95% of tumour.
- Moderately differentiated adenocarcinoma exhibit 50-95% of glandular structures.
- Poorly differentiated adenocarcinoma exhibits glandular structure in less than 50% of tumour.
- Undifferentiated carcinoma- No apparent gland formation is seen.

Well differentiated accounted for 12 cases (41.4%), moderately differentiated adenocarcinoma accounted for 13 cases (44.8%) and poorly differentiated adenocarcinoma accounted for 4 cases (13.8%). No undifferentiated type was encountered in our study.

**Mucinous Carcinoma**

There were 4 cases (11.7%) of mucinous adenocarcinoma among 34 adenocarcinomas. The age of the patients ranged from 30 years to 70 years with a mean age of 52.25 yrs. Majority of the mucinous carcinoma were seen in females.
with a male to female ratio of 1:3. Out of 4 cases of mucinous adenocarcinoma, 3 were located in rectum and remaining one was located in the ascending colon. Microscopy showed presence of mucin in more than 50% of tumour.

**Signet Ring Cell Carcinoma**

One case (2.9%) of signet ring cell carcinoma was seen in a 43-year-old male patient in rectum. Microscopy showed intracytoplasmic mucin in more than 50% of tumour cells. Mucin was demonstrated by special stains like PAS and Mucicarmine.

**Lymphoma**

One case of Non-Hodgkin lymphoma was encountered among 35 malignant lesions which was seen in a 50-year-old female. The lesion was located in caecum. Colonoscopy showed mucosal elevation and congestion. Microscopy showed large non cleaved lymphoid cells (centroblasts), often with an admixture of immunoblasts, plasmablasts, and/or multilobated large lymphoid cells.

**DISCUSSION**

150 cases of colonic biopsies were included in the study. Age of the patients ranged from 3-87 years with a mean age of 47.65 years. This was in comparison with study done by Al Quorain et al (37±15), Shahriar et al (43±15), Pugilisi et al and Ian et al (45 yrs). Among the patients who presented with intestinal complaints, majority were males (55.3%) with a male to female ratio of 1.23:1. The male to female ratio in our study was in comparison with the studies conducted by Mohammed et al (1.6:1), Shahriar et al (1.2:1) Pugilisi et al (1.4:1) and Al Quorain et al (3.7:1).

In our study, the most common clinical presentation was bleeding per rectum and pain abdomen constituting 37.3%. This is in concordance with the study conducted by Philipo et al where in rectal bleeding and abdominal pain were the most common presentation accounting to 48%. Other symptoms constituted altered bowel habits, vomiting and weight loss. On histopathological evaluation of biopsy, all the lesions were divided into neoplastic and non-neoplastic lesions. In our study, majority of the colonic lesions were non-neoplastic accounting to 61.3% and the
remaining lesions were neoplastic accounting to 38.7%. This high incidence of non-neoplastic colonic lesion was in comparison with studies conducted by Azhar et al (61%), Shahriar et al (64%), Pugilisi et al (64.1%) and Robert et al (64%). The most common non-neoplastic lesion was non-IBD colitis accounting for 54.3% which included microscopic colitis, acute nonspecific colitis, chronic colitis, acute on chronic colitis, eosinophilic colitis and pseudomembranous colitis. This was in comparison with the study conducted by Kenneth et al.\(^9\)

Inflammatory bowel disease accounted for 37 cases (40.2%) of which 28 cases were ulcerative colitis, 3 cases were Crohn’s disease and 6 cases were indeterminate colitis. Among the inflammatory bowel disease, the incidence of ulcerative colitis was more than Crohn’s disease. This is comparable to the study conducted by Mohammed et al,\(^6\) Shahriar et al\(^3\) and Saro et al.\(^10\) However the incidence of Crohn’s disease was more than ulcerative colitis in a study conducted by Kenneth D et al in Texas.

In our study group, majority (70%) of the patients with IBD were under 45 years which was in concordance with study conducted by Pugilisi Carlo et al (69%). The incidence of ulcerative colitis was slightly more in males with a male to female ratio of 1.1:1. This is in concordance with study conducted by Alam et al in various parts of Asia in which there was a marked male predominance in the incidence of UC.\(^11\) More recent studies from the same areas as well as studies from Japan or Korea by Duphare, Misra et al have shown that men and women are generally at similar risk.

In our study, 39.2% of ulcerative colitis showed mild dysplasia and 14.2% showed moderate dysplasia. Ulcerative colitis has propensity for malignant transformation after 10-20 years. Therefore, patients with dysplasia should be advised to follow up by periodic colonoscopic evaluation.

Among the 23 benign colonic lesions, the incidence of hyperplastic polyps (43.4%) outnumbered that of adenomatous polyp (39.13%). This was in concordance with the study conducted by Liljegren\(^12\) and Alexandros.\(^13\) The incidence of hyperplastic polypl increases in frequency with age. Some authors regard hyperplastic polypl as the possible precursor of colorectal neoplasia. The presence of clonal genetic alterations, including K-RAS mutation, BRAF, TGF, DNA microsatellite instability and loss of APC, p53, p16 genes and tumour suppressor gene on chromosome 1p had led to the suggestion that hyperplastic polypl are neoplastic.\(^14\) Juvenile polypl (17.3%) are the most common hamartomatous polypl seen in paediatric age group. There were 4 cases of juvenile polypl encountered in our study of which one case had mild dysplasia. All the polypl were located in rectum. This was in concordance with study conducted by Thura et al\(^15\) and Franklin et al.\(^16\)

The age group affected by adenoma in our study ranged from 31 years to 73 years with a mean age of 60-78 years, with male predominance (66.6%). Male to female ratio is 2:1 which is in concordance with the National polypl study where adenoma occurred more frequently in men than women 61.6% versus 38.4%.\(^17\)

The most common adenoma encountered was tubular adenoma (44%) followed by tubulovillous and villous adenoma which was in concordance with the study conducted by Thomas et al.\(^18\) Gillespie et al\(^19\) and Tze Jui et al.\(^20\) Villous adenoma was seen in patients older than 55 years of age. 44.4% of patients with adenoma had associated colorectal carcinoma. There was no case of familial adenomatous polyposis encountered in our study. Most sporadic adenomas occur in the rectosigmoid region.

In the study conducted by Gillespie et al, most adenomas were seen in the left side of the colon and majority being tubular adenoma.\(^21\)

Adenocarcinomas are generally considered to arise from adenomas based upon the important observations that benign and malignant tissue occur within colorectal tumours. When patients with adenomas were followed for 20 years, the risk of cancer at the site of the adenoma was 25%, a rate much higher than that expected in the normal population. Three characteristics of adenomas that are highly correlated with the potential to transform into cancer are larger size, villous pathology, and high degree of dysplasia within the adenoma.

### Table 4. Comparison of Incidence of Different Types of Adenoma with Other Studies

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Studies</th>
<th>Tubular</th>
<th>Tubulo-villous</th>
<th>Villous</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Present study</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>9</td>
</tr>
</tbody>
</table>

**Malignant Lesions**

Colorectal cancer (CRC) is the third most common cancer in men (663,000 cases, 10.0% of the total cancers) and the second in women (570,000 cases, 9.4% of the total cases) Worldwide. Population based time trend studies show a rising trend in the incidence of CRC in India. Worrisome is the finding that the incidence rates of CRC in Indian immigrants to the United Kingdom and USA are much higher, suggesting that life styles and dietary habits are important in the causation of the CRC. The incidence of colorectal carcinoma in Indian males is 4.3/100,000 population and in females is 3.4/100,000 population. In our study the age range of patients with colorectal malignancy ranged from 30-80 years with a mean age of 57.32 yrs. This is in concordance with finding of Osime U et al\(^22\) (56.4), Fazeli et al\(^23\) (52.3) and Abdul et al.\(^24\) All the cases of colorectal carcinoma in the study group were sporadic.

The youngest patient affected by colorectal carcinoma in our study was 30 years. The incidence of colorectal carcinoma shows an increasing trend toward relatively younger age group in the study conducted by Philipo et al in Tranzvania and Abou Zeid et al\(^25\) in Egypt probably due to changing life styles and dietary habits. In the present study, the incidence of colorectal carcinoma was more in male 62.87%, This is in concordance with study conducted by Philipo et al\(^7\) (60%), Abou Zeid et al\(^23\) (58%), Abdul et al\(^24\) (56%), Newland et al\(^26\) (70%). The male to female ratio of...
colorectal malignancy in our study is 1.69:1. The most common colorectal biopsy finding encountered was ulceroproliferative growth (92%), followed by ulceration (8%). These findings were in concordance with study conducted by Qizilbash et al\textsuperscript{27} (1982). Rectum and sigmoid colon are the most common sites for colorectal carcinoma. In our study, rectum (70.5%) was the most common site involved, which is in concordance with the various studies conducted by Abdul et al\textsuperscript{24} (2008), Osime et al\textsuperscript{25} (1988) and Dajani et al\textsuperscript{26} (1980).

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Caecum</td>
<td>9%</td>
<td>2(2.6%)</td>
<td>85(6.6%)</td>
<td>1(2.9%)</td>
</tr>
<tr>
<td>Ascending Colon</td>
<td>6%</td>
<td>2(2.6%)</td>
<td>7(4.9%)</td>
<td>2(5.8%)</td>
</tr>
<tr>
<td>Hepatic Flexure</td>
<td>0%</td>
<td>1(1.32%)</td>
<td>3(2.12%)</td>
<td>3(8.8%)</td>
</tr>
<tr>
<td>Transverse Colon</td>
<td>4.5%</td>
<td>1(1.32%)</td>
<td>4(2.8%)</td>
<td>1(2.9%)</td>
</tr>
<tr>
<td>Splenic Flexure</td>
<td>0%</td>
<td>1(1.32%)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Descending Colon</td>
<td>3.6%</td>
<td>3(3.94%)</td>
<td>10(7%)</td>
<td>0</td>
</tr>
<tr>
<td>Sigmoid Colon</td>
<td>0%</td>
<td>6(7.89%)</td>
<td>23(16.3%)</td>
<td>3(8.8%)</td>
</tr>
<tr>
<td>Rectum</td>
<td>58.8%</td>
<td>60(78.95%)</td>
<td>80(56.7%)</td>
<td>24(70.5%)</td>
</tr>
<tr>
<td>Not Specified</td>
<td>19.5%</td>
<td>0</td>
<td>6(4.25%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 5. Comparison of Location of Colorectal Carcinoma with Other Studies

In our study, adenocarcinoma was the most common malignancy of colon accounting for 97%, which is in comparison with the studies conducted by Philipo et al\textsuperscript{27} (98.8%), Abdul et al\textsuperscript{24} (96%), Stewart et al\textsuperscript{28} (94%) and Fazeli et al\textsuperscript{29} (96%). One case of malignant lymphoma was noted in our study (3%). Conventional adenocarcinoma was the most common type of adenocarcinoma encountered, accounting to 29 cases (85%) followed by mucinous adenocarcinoma and signet ring cell carcinoma which was in concordance with study conducted by Philipo et al\textsuperscript{27} (83.8%), Abdul et al\textsuperscript{24} (90%) and Dajani et al\textsuperscript{26} (84%). Mucinous tumours are less common and account for 10-15% of colorectal carcinoma. Mucinous carcinoma are by far the most common type of carcinoma arising in villous adenoma and in the setting of IBD. However, in a study conducted by Dajani et al in Jordan, the incidence of mucinous carcinoma was 17.02%.

Signet ring cell carcinoma is more commonly seen in relatively younger age group.\textsuperscript{20} In our study, one case of signet ring cell carcinoma was seen in a 43-year-old male.

Signet ring cell carcinoma carries a very bad prognosis despite vigorous management. According to WHO morphological grading of tumours applies only to adenocarcinoma, NOS. Other morphological variants carry their own prognostic significance and grading does not apply. In present study, 44.8% of conventional adenocarcinoma were moderately differentiated, 41.3% were well differentiated and 13.7% were poorly differentiated. Thus, the incidence of moderate to well differentiated are more commonly encountered adenocarcinoma which is in concordance with various studies conducted by Abdul et al (2008), Stewart et al (2006) and Fazeli et al (2007). We did not encounter any case of undifferentiated carcinoma.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Studies</th>
<th>Well Differentiated</th>
<th>Moderately Differentiated</th>
<th>Poorly Differentiated</th>
<th>Undifferentiated</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Philipo et al (2013)</td>
<td>102(31.1%)</td>
<td>185(56.4%)</td>
<td>41(12.5%)</td>
<td>0</td>
</tr>
<tr>
<td>2.</td>
<td>Abdul et al (2008)</td>
<td>23(65.6%)</td>
<td>88(24.7%)</td>
<td>34(9.7%)</td>
<td>0</td>
</tr>
<tr>
<td>4.</td>
<td>Osime et al (1988)</td>
<td>7(10.1%)</td>
<td>40(58.1%)</td>
<td>22(31.8%)</td>
<td>0</td>
</tr>
<tr>
<td>5.</td>
<td>Fazeli et al (2007)</td>
<td>133(37.6%)</td>
<td>187(52.8%)</td>
<td>34(9.6%)</td>
<td>0</td>
</tr>
<tr>
<td>6.</td>
<td>Present Study</td>
<td>12(41.3%)</td>
<td>13(44.8%)</td>
<td>4(13.7%)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 6. Comparison of Histological Grading of Adenocarcinoma with Other Studies

The incidence of primary colorectal lymphoma is very rare accounting for 0.2-0.4% of all the malignant neoplasm of colon. It occurs most commonly in the caecum and is seen more frequently in elderly patients. Histologically majority of the intestinal lymphoma are Diffuse Large B Cell Lymphoma. In the present study, one case of NHL was encountered in caecum in a 50-year-old female. This was in concordance with study conducted by Osime et al\textsuperscript{28} (2006)\textsuperscript{31} where caecum was the most common site involved in intestinal lymphoma and majority were of Diffuse Large B Cell Lymphoma.

CONCLUSIONS

The incidence of colonic lesions is increasing in recent years with early onset of inflammatory bowel disease and colorectal neoplasm in relatively younger age group due to changing life style and dietary habits. Colonoscopy is a simple, relatively safe and fairly accurate out-patient procedure with high diagnostic and therapeutic potential. Colonoscopic biopsy has a very high diagnostic yield and hence should be considered as the first line of investigation in patients presenting with bleeding per rectum, abdominal pain and other symptoms of colorectal pathology. Periodic colonoscopic biopsy can help in the early detection of malignant transformation in patients with ulcerative colitis and adenoma and thereby decreasing the mortality from colorectal carcinoma.

Acknowledgement

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