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Analysis of Lesions of Colon- A Histopathological Study

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Abstract
Background: *Colon lesions are quite common in population. The risk for developing invasive colorectal cancer increases with age, with more than 90% of new cases being diagnosed in patients older than 50 years. The present study analyzed the lesions of large intestine.*
Materials & Methods: *It included 136 specimens which included both resected specimens and biopsies submitted to the department. All biopsies and resected specimens received were immediately fixed in 10% formalin for 24 h. Gross features of specimen were noted, and multiple sections were taken.*
Results: *Maximum lesions were seen in age group 40-60 followed by 60-80, 20-40 and 0-20 years. Out of 136 lesions, 70 were neoplastic and 66 were non neoplastic and out of 70 neoplastic lesions, 14 were benign and 56 were malignant. Non neoplastic lesions were chronic colitis, tuberculous, ischemic colitis, inflammatory polyp (8) and inflammatory bowel disease (14). Benign lesions were inflammatory polyp (6), adenomatous polyp (4) and juvenile polyp (4). Malignant lesions were well differentiated adenocarcinoma (15), moderately differentiated adenocarcinoma (13), poorly differentiated adenocarcinoma (10), mucinous adenocarcinoma (12) and signet ring adenocarcinoma (6).*
Conclusion: *Most common seen lesions were neoplastic and maximum were malignant. Among malignant, well differentiated adenocarcinoma was mostly seen. Age group 40-60 years showed higher prevalence rate.*
Keywords: *Colon, Benign, Malignant.*

Introduction

Globally, nearly 800000 new colorectal cancer cases are believed to occur, which accounted for approximately 10% of all incident cancers, and mortality from colorectal cancer was estimated at nearly 450000. Although its incidence varies widely with higher incidence rates in North America, Australia and Europe and lower in developing countries. The risk for developing invasive colorectal cancer increases with age, with more than 90% of new cases being diagnosed in patients older than 50 years. The overall incidence of colorectal cancer decreased at a rate of 2.1% per year from 1998 to 2003, and the death rate decreased 2.8% annually over the period 2001 to 2003.2 Generally speaking, colorectal cancer incidence and mortality rates are the greatest in developed Western nations.[1]

Most colorectal cancers are due to old age and lifestyle factors with only a small number of cases due to underlying genetic disorders. Some risk factors include diet, obesity, smoking, and lack of physical activity. Dietary factors that increase the risk include red and processed meat as well as alcohol. Another risk factor is inflammatory bowel disease, which includes Crohn's disease and

ulcerative colitis. Some of the inherited genetic disorders that can cause colorectal cancer include familial adenomatous polyposis and hereditary non-polyposis colon cancer; however, these represent less than 5% of cases. It typically starts as a benign tumor, often in the form of a polyp, which over time becomes cancerous.[2]

Adenocarcinoma is the most common malignancy arising in colorectal region. Non-neoplastic polyps are classified as hyperplastic, hamartomatous, juvenile, peutz jegher, inflammatory, and lymphoid polyps and other benign conditions are adenoma, neuroma, lipoma, angioma. Inflammatory bowel diseases such as ulcerative colitis are premalignant conditions.[3] The present study analyzed the histopathological cases of lesions of large intestine.

Materials & Methods

This study was conducted in the department of general pathology. It included 136 specimens which included both resected specimens and biopsies submitted to the department.

All biopsies and resected specimens received were immediately fixed in 10% formalin for 24 h. Gross features of specimen were noted, and multiple sections were taken. Routine tissue processing was done. Sections were stained with hematoxylin and eosin. After detailed study of the sections under the light microscope, the final diagnosis was given. Ethical clearance was taken prior to the study. Results thus obtained were subjected to statistical analysis using chi- square test. P value less than 0.05 was considered significant.

Results

Table I Distribution of subjects

Lesion	Number	P value
Neoplastic	70	
Non- neoplastic	66	0.5

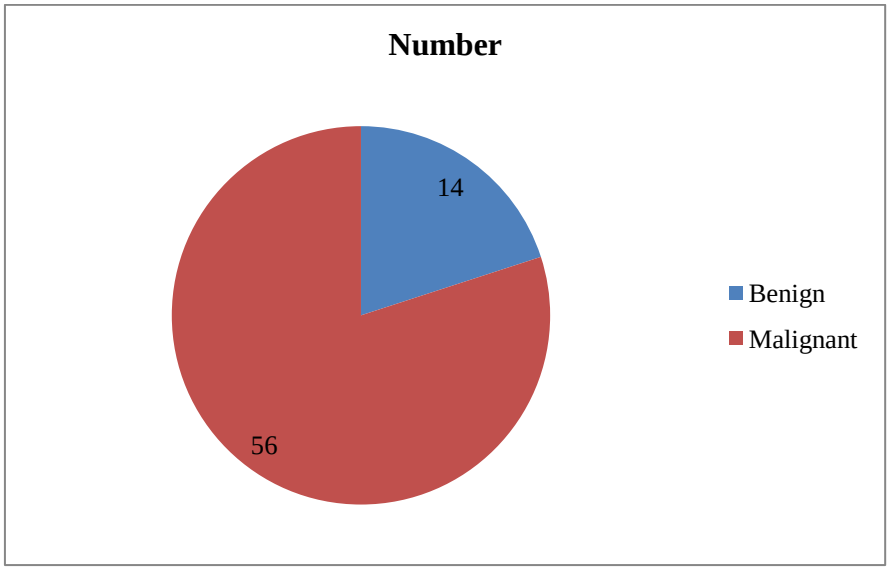
Table I shows that out of 136 lesions, 70 were neoplastic and 66 were non neoplastic. The difference was non- significant (P-0.5).

Table II Age & Gender wise distribution of lesion

Age group (years)	Males	Females	P value
0-20	4	6	1
20-40	20	10	0.01
40-60	37	20	0.05
60-80	24	15	0.02
Total	85	51	

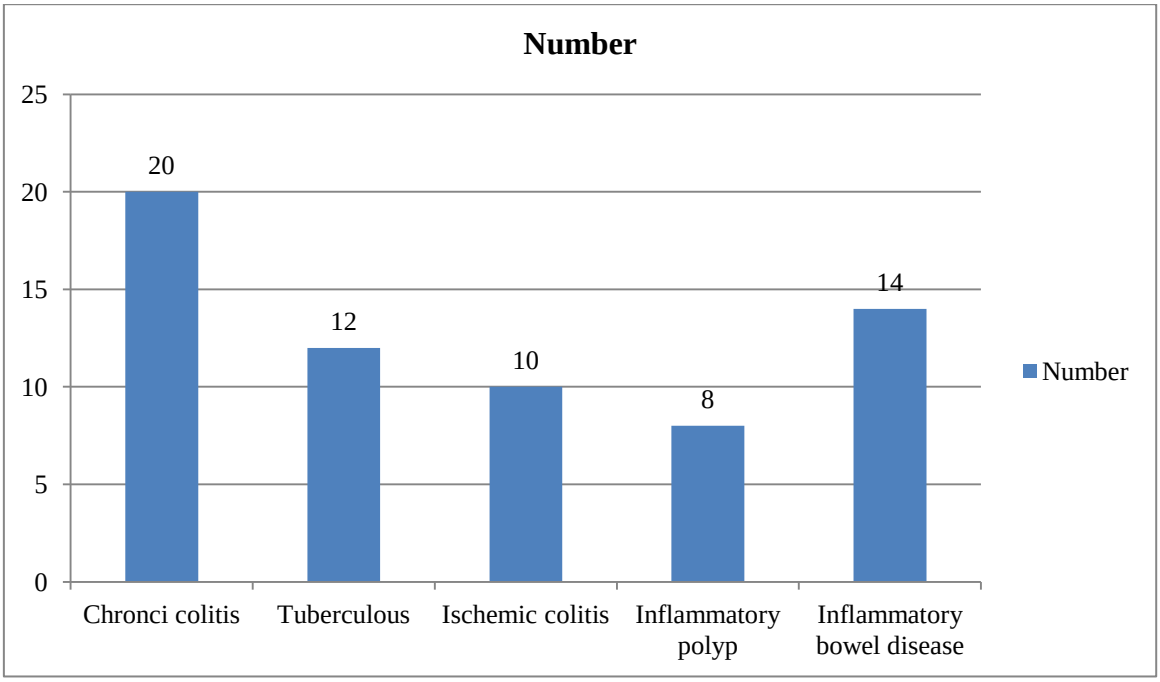
Table II shows that age group 0-20 years had 4 males and 6 females, 20-40 years had 20 males and 10 females, 40-60 years had 37 males and 20 females, 60-80 years had 24 males and 15 females. The difference was significant (P<0.05).

Graph I Incidence of neoplastic lesion



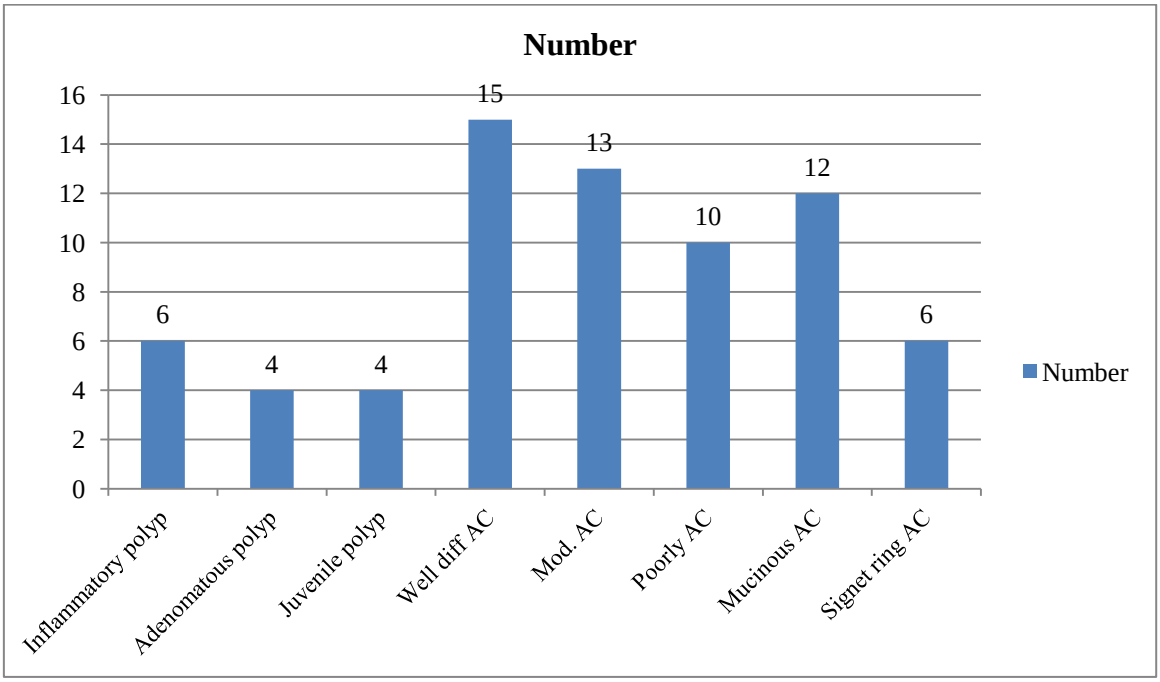
Graph I shows that out of 70 neoplastic lesions, 14 were benign and 56 were malignant. The difference was significant (P<0.05).

Graph II Various morphological lesions



Graph II shows various non neoplastic lesions were chronic colitis (20), tuberculous (12), ischemic colitis (10), inflammatory polyp (8) and inflammatory bowel disease (14). The difference was non- significant (P>0.05).

Graph III Neoplastic lesions



Graph III shows that benign lesions were inflammatory polyp (6), adenomatous polyp (4) and juvenile polyp (4). Malignant lesions were well differentiated adenocarcinoma (15), moderately differentiated adenocarcinoma (13), poorly differentiated adenocarcinoma (10), mucinous adenocarcinoma (12) and signet ring adenocarcinoma (6). The difference was significant (P<0.05).

Discussion

The signs and symptoms of colorectal cancer depend on the location of the tumor in the bowel, and whether it has spread elsewhere in the body

(metastasis). The classic warning signs include: worsening constipation, blood in the stool, decrease in stool caliber (thickness), loss of appetite, loss of weight, and nausea or vomiting in someone over 50 years old. While rectal bleeding or anemia are high-risk features in those over the age of 50, other commonly described symptoms including weight loss and change in bowel habit are typically only concerning if associated with bleeding.[4] The present study analyzed the histopathological cases of lesions of large intestine.

We found that maximum lesions were seen in age group 40-60 followed by 60-80, 20-40 and 0-20. Out of 136 lesions, 70 were neoplastic and 66 were non neoplastic and out of 70 neoplastic lesions, 14 were benign and 56 were malignant. This is similar to Roth.[5]

We observed that various non neoplastic lesions were chronic colitis, tuberculous, ischemic colitis, inflammatory polyp and inflammatory bowel disease. Benign lesions were inflammatory polyp, adenomatous polyp and juvenile polyp. Malignant lesions were well differentiated adenocarcinoma, moderately differentiated adenocarcinoma, poorly differentiated adenocarcinoma, mucinous adenocarcinoma and signet ring adenocarcinoma. This is in agreement with Tony et al.[6]

People with inflammatory bowel disease (ulcerative colitis and Crohn's disease) are at increased risk of colon cancer. The risk increases the longer a person has the disease, and the worse the severity of inflammation. In these high risk groups, both prevention with aspirin and regular colonoscopies are recommended.[7]

Colorectal cancer diagnosis is performed by sampling of areas of the colon suspicious for possible tumor development, typically during colonoscopy or sigmoidoscopy, depending on the location of the lesion. It is confirmed by microscopical examination of a tissue sample. Disease extent is usually determined by a CT scan of the chest, abdomen and pelvis. Other potential imaging tests such as PET and MRI may be used in certain cases.[8]

Current dietary recommendations to prevent colorectal cancer include increasing the consumption of whole grains, fruits and vegetables, and reducing the intake of red meat and processed meats. Higher physical activity is also recommended. Physical exercise is associated with a modest reduction in colon but not rectal cancer risk. High levels of physical activity reduce the risk of colon cancer by about 21%. Sitting regularly for prolonged periods is associated with higher mortality from colon cancer.[9] The risk is not negated by regular exercise, though it is lowered. The evidence for any protective effect conferred by fiber and fruits and vegetables is, however, poor. The risk of colon cancer can be reduced by maintaining a normal body weight.[10]

Conclusion

Most common seen lesions were neoplastic and maximum were malignant. Among malignant, well differentiated adenocarcinoma was mostly seen. Age group 40-60 years showed higher prevalence rate.

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