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Study Of Grading And Assessment Of Different Types Of Colorectal Tumour At Tertiary Care Hospital.

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ABSTRACT

Our study investigates grading and assessment of different types of colorectal tumour based on a comprehensive analysis of 1610 neoplastic lesions from various organs and tissues. Colorectal neoplasms accounted for 6.5% of all lesions, with 32 benign and 73 malignant cases. Malignant tumors were predominant (69.5%), emphasizing the clinical significance of colorectal neoplasms. Histological grading revealed a majority of moderately differentiated adenocarcinomas (55.2%), with TNM staging indicating a substantial proportion at advanced stages, emphasizing the urgency for early detection. Carcinomas constituted 68.6% of epithelial lesions, underlining the diverse nature of colorectal neoplasms. Clinical presentations varied, with bleeding per rectum being the most common (35.2%). Anatomical site distribution highlighted a higher prevalence of malignant neoplasms in the sigmoid colon (19.2%) and rectum (50.7%). The left side exhibited a higher male-to-female ratio (3.2:1). This study underscores the complexity of colorectal neoplasms, necessitating a multidisciplinary approach for accurate diagnosis and tailored treatment. Further research is warranted to enhance understanding and optimize management protocols.

Keywords: Colorectal neoplasms, histological grading, clinical presentations, anatomical distribution.

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INTRODUCTION

The study of grading and assessment of different types of colorectal tumors is crucial for understanding the heterogeneity and clinical implications of these neoplasms [1]. Colorectal cancer ranks among the leading causes of cancer-related morbidity and mortality worldwide, necessitating comprehensive investigations into its histopathological characteristics. This research focuses on a tertiary care hospital, recognized for its advanced diagnostic and treatment facilities, to provide a nuanced analysis of colorectal tumors [2, 3].

Colorectal tumors encompass a spectrum of lesions, ranging from benign adenomas to malignant adenocarcinomas, each posing distinct challenges in diagnosis and management. Grading, which evaluates the degree of differentiation in malignant tumors, plays a pivotal role in predicting prognosis and guiding therapeutic decisions. Additionally, understanding the anatomical distribution of these tumors within the colorectum is essential for tailoring effective treatment strategies [4-6].

Given the evolving area of colorectal cancer research, our study aims to contribute valuable insights into the prevalence, grading, and anatomical distribution of colorectal tumors within a tertiary care setting.

METHODOLOGY

The study was conducted at the Central Diagnostic Laboratory at A.J Institute of Medical Sciences and Research Centre, Mangalore, spanning a total duration of four and a half years, from January 2014 to June 2018. The research comprised both retrospective and prospective components, with a retrospective analysis, followed by a two-year prospective study. The primary objective of the investigation was to undertake a descriptive study focusing on colorectal biopsies and specimens referred to the laboratory for histopathological evaluation during the specified period.

The sample size for the study included fifty cases that met the inclusion criteria. All colorectal biopsies for tumors and colorectal tumor resection specimens referred to the Central Diagnostic Laboratory during the study period were considered. Exclusion criteria were established for colorectal specimens received for non-neoplastic conditions such as inflammatory and ischemic conditions. The data collected underwent thorough statistical analysis, with clinical findings, age, sex, clinical presentation, site, operative findings, gross features, histologic subtypes, lymphovascular invasion, TNM staging, grading of tumors, and lymph node involvement being among the parameters examined. The information was meticulously gathered from requisition forms, medical records, histopathology reports, and direct examination of hematoxylin and eosin-stained slides.

In the process of data analysis, a detailed procedure was followed. The clinical details and pathological findings were entered into a data collection proforma sheet. The data underwent comprehensive descriptive analyses, and the results were tabulated using MS EXCEL. Relevant statistical tests were applied as needed, and the findings were presented in the form of tables, graphs, and figures, providing a comprehensive overview of the collected data.

RESULTS

Out of 1610 neoplastic lesions from different organs/tissues in the study period 105 were colorectal neoplasms accounting for 6.5% of all neoplastic lesions. Thirty-two benign colorectal neoplasms were found, which constituted 6.1% of the benign neoplasms. Seventy-three malignant colorectal neoplasms were found in this study which accounted for 6.7% of all malignant neoplasms.

In the study malignant tumors (69.5%) were more common than benign tumors (30.5%).

Table 1: Grading in colorectal adenocarcinomas nostype (n=58)

Grading	Right	Left	Total no of cases	Percentage
Well differentiated	4	16	20	34.5%
Moderately differentiated	6	26	32	55.2%
Poorly differentiated	1	5	6	10.3%
Total	11	47	58	100%

Table 2: TNM- staging

STAGE	NO OF CASES	PERCENTAGE
Stage 0	0	0
Stage I	11	29.7%
Stage II	8	21.7%
Stage III	17	45.9%
Stage IV	1	2.70%
Total	37	100%

Table 3: Proportion of different types of epitheliallesion

Primary epithelial lesions	No of cases	Percentage
Carcinomas	70	68.6%
Adenomas	21	20.6%
Polyps (Juvenile & Hyperplastic)	11	10.8%
Total	102	100%

Patients of colorectal neoplasms presented with clinical features like bleeding per rectum, altered bowel habits, intestinal obstruction, pain & palpable mass, and pallor.

The most common clinical feature was bleeding per rectum in 37 out of 105 cases, accounting for 35.2% irrespective of the type of growth, ie benign or malignant, followed by altered bowel habits in 31 cases (29.5%), intestinal obstruction in 10 cases (9.5%) and pallor in 15 cases (14.3%).

Table 4: Anatomical site distribution of benign andmalignant neoplasms of colorectum

Neoplasms	Caecum n(%)	Ascending colon n(%)	Transverse colon n (%)	Descending colon n (%)	Sigmoid colon n (%)	Rectum n (%)	Total n(%)
Malignant	6 (8.2%)	9 (12.3%)	6 (8.2%)	1 (1.4 %)	14 (19.2%)	37 (50.7%)	73
Benign	1 (3.1%)	6 (18.8%)	0	2 (6.3%)	9 (28.1%)	14 (43.8%)	32

Table 5: Site distribution of benign neoplasms in male andfemale

Anatomical site	Male	Female	Total	Male: Female Ratio
Right	4 (17.4%)	3 (33.3%)	7	1.3:1
Left	19 (82.6%)	6 (66.7%)	25	3.2:1
Total	23 (100%)	9 (100%)	32	2.6:1

DISCUSSION

Colorectal neoplasms, comprising both benign and malignant tumors, were investigated in a study involving 1610 neoplastic lesions across various organs and tissues. The focus on colorectal lesions revealed intriguing findings, with colorectal neoplasms accounting for 6.5% of all neoplastic lesions in the study period.

The prevalence of colorectal neoplasms in the study demonstrates their significance within the broader context of neoplastic lesions. Out of the 105 colorectal neoplasms identified, 32 were benign, constituting 6.1% of all benign neoplasms, and 73 were malignant, making up 6.7% of all malignant neoplasms. The predominance of malignant tumors (69.5%) over benign tumors (30.5%) emphasizes the clinical relevance and potential severity of colorectal neoplasms [7].

The grading of colorectal adenocarcinomas provides valuable insights into the histological characteristics of the malignant lesions. The majority of cases were moderately differentiated (55.2%), followed by well-differentiated (34.5%) and poorly differentiated (10.3%). This distribution suggests that a significant proportion of colorectal adenocarcinomas in the study displayed intermediate levels of differentiation, which may have implications for prognosis and treatment strategies. TNM staging further categorizes the malignant colorectal neoplasms, revealing a distribution across different stages. Stage III was the most prevalent (45.9%), followed by Stage I (29.7%) and Stage II (21.7%). These findings indicate that a substantial number of patients presented with advanced-stage colorectal adenocarcinomas, emphasizing the need for early detection and intervention to improve outcomes.

The types of epithelial lesions identified in the study shed light on the diversity of colorectal neoplasms. Carcinomas were the predominant type (68.6%), followed by adenomas (20.6%) and polyps (10.8%). This distribution underscores the importance of recognizing and characterizing different epithelial LESIONS for accurate diagnosis and tailored treatment approaches [8-11].

Clinical presentation varied among patients with colorectal neoplasms, with common features including bleeding per rectum, altered bowel habits, intestinal obstruction, pain, palpable mass, and pallor. Bleeding per rectum emerged as the most frequent clinical feature, occurring in 35.2% of cases, irrespective of the growth type (benign or malignant). This emphasizes the need for vigilance in identifying and addressing symptoms related to colorectal neoplasms, particularly those indicative of bleeding.

The anatomical site distribution of both benign and malignant neoplasms within the colorectum provides insights into the localization of these lesions. Malignant neoplasms were more prevalent in the sigmoid colon (19.2%) and rectum (50.7%), while benign neoplasms showed a varied distribution across different sites. The male-to-female ratio in anatomical site distribution highlighted variations between the right and left sides, with a higher prevalence in the left side (3.2:1). These findings underscore the importance of considering the anatomical location when diagnosing and managing colorectal neoplasms.

CONCLUSION

In conclusion, the study provides a comprehensive overview of colorectal neoplasms, encompassing prevalence, histological grading, TNM staging, types of epithelial lesions, clinical features, and anatomical site distribution. The predominance of malignant tumors, particularly in advanced stages, emphasizes the need for early detection and intervention to improve patient outcomes. The diverse histological characteristics and clinical presentations underscore the complexity of colorectal neoplasms, necessitating a multidisciplinary approach for accurate diagnosis and tailored treatment strategies. Further research and clinical studies are warranted to enhance our understanding of colorectal neoplasms and optimize management protocols for better patient outcomes.

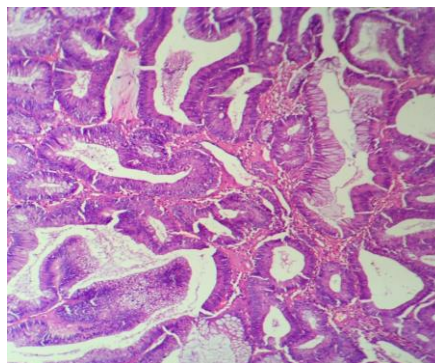


Figure 1: Tubulovillous Adenoma With Tubular & Villous Components (H&E, 40x)

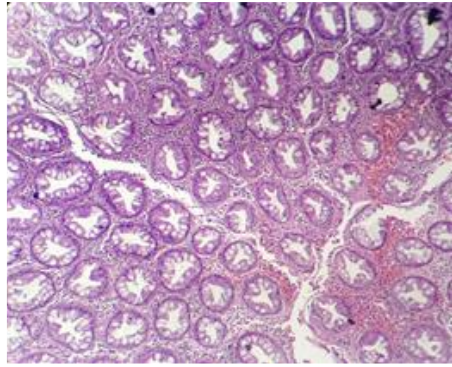


Figure 2: Hyperplastic Polyp With Prominent Luminal Serrations (H&E, 10x)

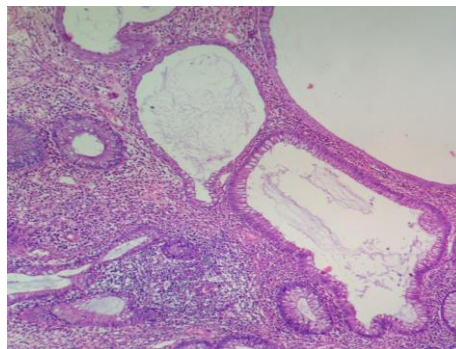


Figure 3: Juvenile Polyp With Dilated Glands And Luminal Secretions (H&E, 10x)

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