



Evaluating Colorectal Cancer Types and Diagnostic Procedures

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Description

Colorectal Cancer (CRC) is a significant health concern globally, ranking as one of the leading causes of cancer-related deaths. Originating in the colon or rectum, this cancer often begins as benign polyps, which may develop into malignant tumors over time. Understanding the different types of colorectal cancer and the diagnostic procedures available is vital for early detection, effective treatment and improved patient outcomes. Colorectal cancer can be classified into different types based on the specific cells or structures involved. These variations can impact the severity, spread and treatment response of the cancer. Adenocarcinomas account for approximately 95% of all colorectal cancer cases. They begin in the mucous-producing glandular cells that line the colon and rectum. Adenocarcinomas can further be classified into two subtypes. Mucinous adenocarcinoma, this subtype produces excessive mucus which can complicate treatment as it tends to spread more aggressively.

Signet ring cell adenocarcinoma is a rare but highly aggressive form of adenocarcinoma that has poorer prognosis compared to other forms. Carcinoid tumors develop in the neuroendocrine cells of the gastrointestinal tract, which regulate hormone production. These tumors grow slowly and often present fewer symptoms until they reach an advanced stage. Gastrointestinal Stromal Tumors (GIST) arise from specialized cells in the digestive system called the interstitial cells of Cajal. Though rare in the colon, they can occur and are typically detected *via* imaging or endoscopy. GISTs may be benign or malignant, depending on their size and spread. Lymphomas are cancers of the immune system's lymphatic cells and while they are more commonly found in lymph nodes, they can develop in the colon or rectum. Colorectal lymphomas are relatively rare but can be aggressive and are usually detected at later stages.

Sarcomas originate from the connective tissues of the colon or rectum, such as muscle, fat or blood vessels. These cancers are rare but can be highly aggressive, requiring specialized treatment. Several factors can increase the likelihood of developing colorectal cancer.

These risk factors are divided into two categories; modifiable and non-modifiable. The risk of colorectal cancer increases with age, with most cases occurring in individuals over 50 years. A family history of colorectal cancer or inherited conditions such as Lynch syndrome or Familial Adenomatous Polyposis (FAP) significantly raises the risk. Previous colorectal cancer or polyps, as well as a history of Inflammatory Bowel Disease (IBD), increase the likelihood of developing the disease. Diets high in red or processed meat and low in fiber, fruits and vegetables are linked to higher colorectal cancer risk. A sedentary lifestyle increases the risk of colorectal cancer. Long-term smoking and excessive alcohol consumption have been associated with a higher incidence of colorectal cancer.

Being overweight or obese can raise the risk of developing colorectal cancer especially in men. Early detection of colorectal cancer dramatically improves treatment outcomes. Various diagnostic techniques are used to screen for and confirm the presence of colorectal cancer. Colonoscopy is considered the most reliable method for colorectal cancer diagnosis. This procedure allows doctors to examine the entire colon and rectum using a flexible tube with a camera. During the procedure, polyps or suspicious growths can be biopsied or removed for further testing. Colonoscopy is also used for screening high-risk individuals and for regular surveillance after cancer treatment. A sigmoidoscopy is similar to a colonoscopy but only examines the lower part of the colon (the sigmoid colon) and rectum. While less invasive, it does not provide a complete view of the colon, making it less effective for detecting cancers that may be located higher in the colon.

Fecal Occult Blood Test (FOBT) and Fecal Immunochemical Test (FIT) these non-invasive tests detect hidden (occult) blood in the stool, which can be an early sign of colorectal cancer. While useful for initial screening, they cannot provide a definitive diagnosis and are typically followed by a colonoscopy if the results are positive. The imaging test uses Computed Tomography (CT) scans to create detailed images of the colon and rectum. It is a non-invasive alternative to traditional colonoscopy, although polyps detected with this method cannot be removed during the procedure. A follow-up colonoscopy may be required if abnormalities are found.

Conclusion

Colorectal cancer encompasses a range of types, each with distinct characteristics that influence treatment options and prognosis. Early detection through regular screenings and awareness of risk factors is essential in preventing the progression of the disease. Diagnostic procedures such as colonoscopy, biopsy and imaging techniques play an essential role in accurately identifying and classifying colorectal cancer. Advances in molecular testing have further enhanced the ability to personalize treatment, providing patients more targeted and effective therapies. With continued studies and awareness early detection and innovative treatments will continue to improve survival rates and quality of life for those affected by colorectal cancer.

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