Case Report Article

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Synchrous colorectal cancer: A rare case report

Vinay H G[1], Shwetha R Chandra[2], Ramesh Reddy G[3]

Author Affiliation

Associate Professor, [2]Senior Resident, [3]Professor, Department Of General Surgery, Vydehi Institute of Medical Science and Research Centre, Whitefield, Bengaluru 560066, Karnataka, India

Corresponding Author

Associate Professor, Department Of General Surgery, Vydehi Institute of Medical Science and Research Centre, Whitefield, Bengaluru 560066, Karnataka, India

E-mail: vinay_1771@yahoo.co.in

Abstract

Synchronous colorectal cancer is a rare condition, which presents with the simultaneous development of more than one primary carcinoma and affects different segments of the colon and rectum. The incidence of this disease is about 3.5 per cent of all carcinomas of the colon and rectum and more often affects men. Adenocarcinoma is the most common histological type for synchronous colorectal cancer. We present a rare clinical case of a 51-year-old male with synchronous ascending colon and rectal carcinoma, diagnosed by colonoscopy and underwent successful surgical resection for the same.

Key Words: Colon, Colorectal, Adenocarcinoma, Chemotherapy.

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Introduction

Synchronous colorectal carcinoma refers to more than one primary colorectal carcinoma detected in a single patient at initial presentation. A literature review has shown that the prevalence of the disease is approximately 3.5% of all colorectal carcinomas. Colorectal cancers pose a great challenge for clinical management.Extensive surgery is needed for patients with synchronouscolorectal cancer with known predisposing factorssuch as familial adenomatous polyposis, ulcerativecolitis or HNPCC. For other cases, appropriate surgicalresection with colonoscopic examination for follow-upis recommended. We are reporting a case of synchronous colorectal cancer presenting an ascending colon and rectal cancer. With complete work up and diagnosis, patient was managed successfully by surgical resection.

Case Report

We present a 51-year-old male with no comorbidities presented with complaints altered bowel movements and bleeding per rectum. The patient presented with persistent constipation, continuing for years andon laxatives since long. Laboratory tests after admission showed slightly elevated CEA (17.9U/ml). Abdominal sonographyshowed no pathological findings. Colonoscopy revealed two tumors in the large intestine, the ascending colon and the rectum. Histologically was suggestive of adenocarcinoma. Tumor locations werefurther confirmed by contrast enhanced abdominal computed tomography.

The treatment strategy included surgical treatment, eventually followed by adjuvant chemotherapy. Total Colectomy(total mesocolic excision) with anterior resection and ileo-rectal

anastomosis with diversion ileostomy was performed in compliance with all rules for surgical radicality.

The histopathological examinationrevealed as a moderately differentiated adenocarcinoma in both lesions, non-infiltrating the serosa, including the serosa, with no metastases in the removed 26 regional lymph nodes (pT2N0M0). After discharge, the patient was referred to the department of oncology for adjuvant chemotherapy with leucovorin calcium (folinic acid), 5FU and oxaliplatin (FOLFOX).

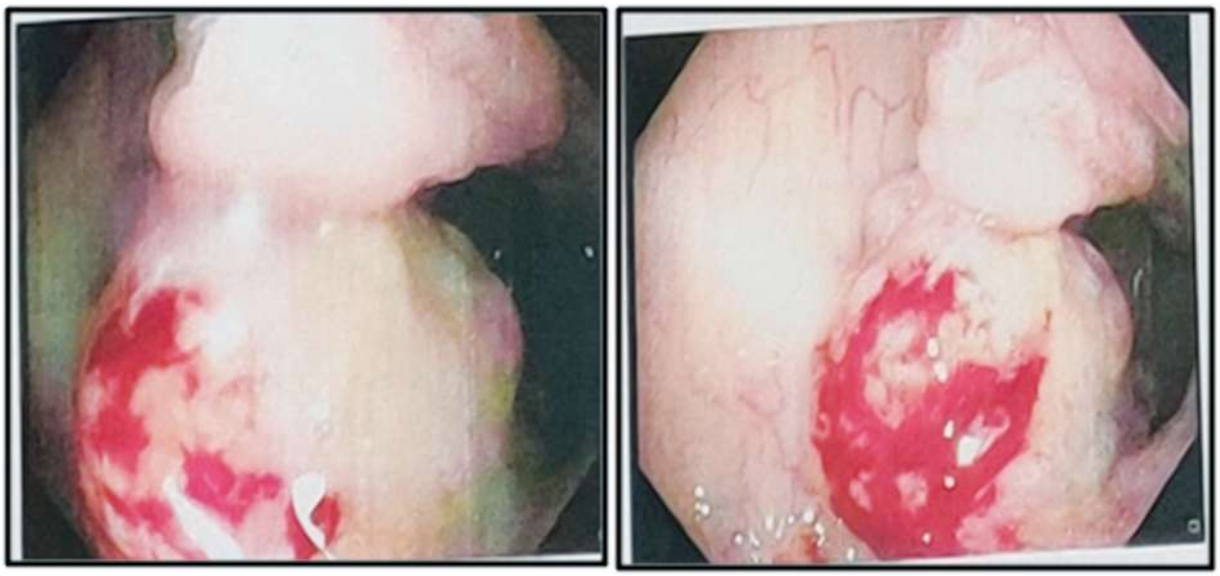

Fig. 1 & 2: Colonscopic image of colonic and rectal tumors

DISCUSSON:

Multiple colorectal carcinoma was first described by VincenzCzerny in 1880.[1]

Synchronous cancers are presence of two or more neoplasms identified simultaneously in the same patient or a second tumor identified up to six months after the initial diagnosis/treatment.

Metachronous tumor is defined as a second primary lesion identified six months after the detection of the first cancer and located no more than 3 cm from the anastomosis. Incidence of synchronous colorectal carcinomas according to the literature is 2 to 9%.[2]

Older male with adenomas of colon are at a particularly high risk of SCRCs and are independent risk factors for SCRCs. Latournerie et al. used advanced statistical approaches, including multivariate logistic regression, to investigate the complex associations of risk factors with SCRC, and found that patients aged 75 years and over were more likely to have SCRCs.[3,4] A study by Fukatsu et al further investigated and found that the lesions of male patients principally occurred in the left colon or bilaterally; however, lesions that occurred exclusively in the right colon did not have gender association. Their analysis indicated that the male gender was a significant risk factor only for those with both tumours located in the left colon[5]. Other known risk factors for SCRC include familial adenomatous polyposis (FAP), hereditary nonpolyposis colorectal cancer (HNPCC), ulcerative colitis and microsatellite instability.[6] Relatives of patients with synchronous or metachronous CRC are at even higher risk of colorectal neoplasia than relatives of patients with solitary CRC. This emphasizes the importance of adherence to surveillance guidelines in high-risk groups[7]. A study by Masatoshi Oya denoted that Synchronous carcinomas were smaller in size and were more frequently found in the left colon than single carcinomas. Also wall penetrations and elevated lesions of synchronous carcinomas were less than those of single carcinomas. Lymphatic invasion was more frequent in index lesions than in concurrent lesions.The index lesions of synchronous carcinomas were similar to single carcinomas in size, differentiation, location and wall penetration. Therefore, the prediction of the presence of synchronouscarcinomas from clinical characteristics or pathological findings is thought

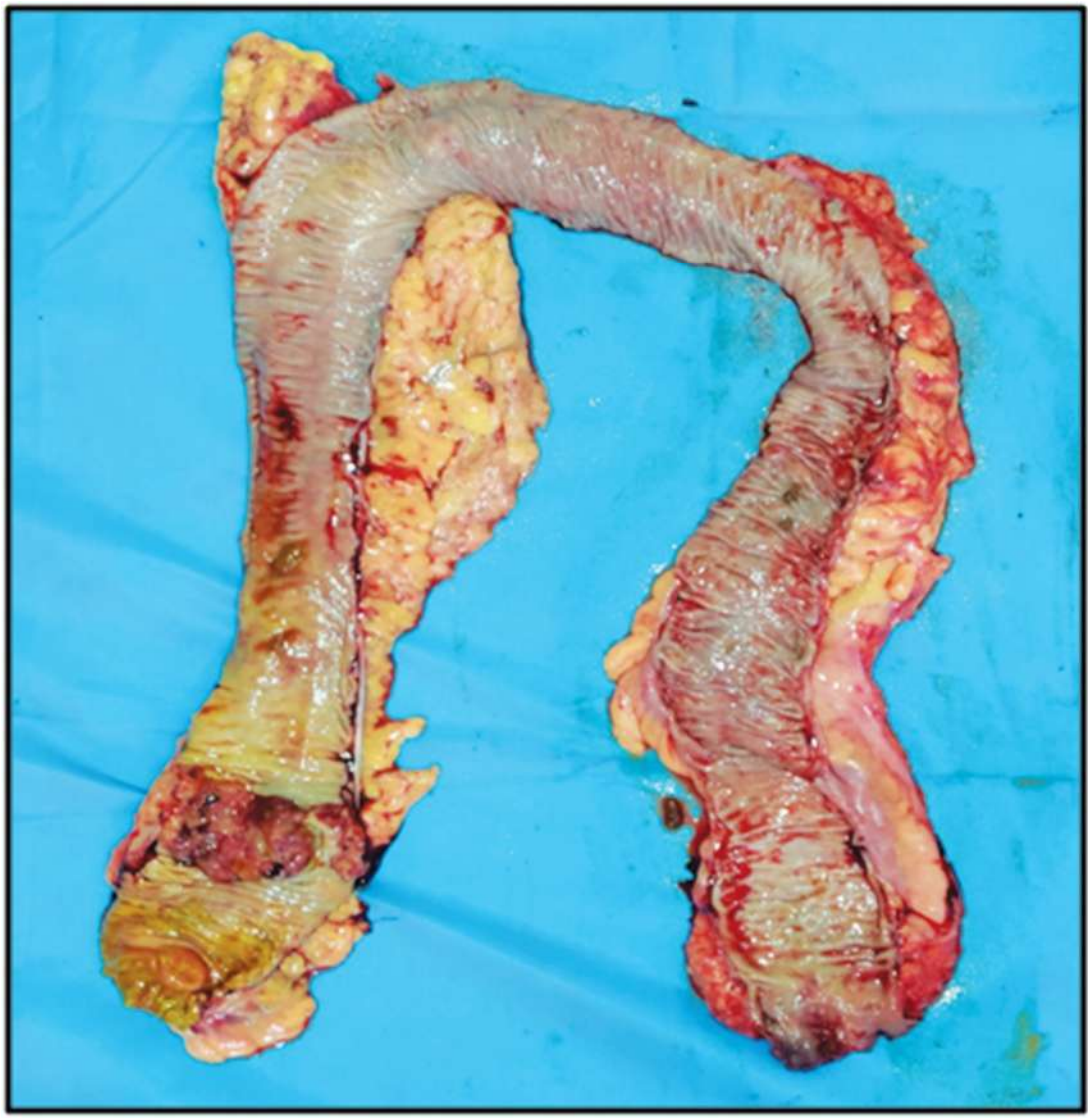

Fig. 3: Excised specimen with tumor seen in the ascending colon and distal rectum.

to be impossible.

Distant metastasis was more frequent in synchronous cases than in single cases. This may be partly due to the relatively frequent venous invasion found in the index lesions of synchronous cases in the present series.[8]

Genetics:

Synchronous lesions within a mainly distinct mutation in the same known CRC genes, although overlaps of few known driver mutations, such as BRAF V600. Highlights heterogeneity in genomic, transcriptomic, microbial and immune CRC biomarkers in syCRC patients, which could have strong implications for therapeutic management, and requires thorough and careful examination. (9)

A study by Wang et al. is the largest sample in which syCRC genomic profiling has been performed on fresh tissue, employed whole-exome capture and next-generation sequencing to obtain complete information in the protein coding sequence of synchronous CRCs from 20 patients. APC, KRAS and TP 53 ranked the top three of the shared mutated cancer genes in synchronous tumours, and they are also frequently mutated in solitary CRCs and demonstrated to drive tumorigenesis by modulating driver pathways that are involved in proliferation, differentiation and apoptosis. At present, no common therapy strategies have been established for syCRCs, and their clinical management is mostly similar to that

of solitary CRC.[10]

In 1975 Heald e Bussey identified all the synchronous colorectal neoplastic lesions (3.5% out of 4884 cases) treated at St. Mark's Hospital in London from 1928 till 1970, showing that 31% of them had been accidentally discovered during intraoperative bowel manipulation while only 15% had already been diagnosed prior to operation (10% by clinical examination, 3% by barium enema, 2% by sigmoidoscopy). Later in seventies the higher employment of preoperative examinations leaded to an increase of synchronous lesions diagnoses. This issue was also stated by Fegiz in 1989 (1.6% of cases diagnosed by double contrast barium enema and 4,1% by colonoscopy).[11]

Diagnosis

Current Recommendations For Screening

FOR AVERAGE RISK PATIENT: FOBT and flexible sigmoidoscopy every 5years, colonoscopy every 10 years, DCBE every 5years. FOR INCREASED RISK PATIENT: With Family history: screening colonoscopy starting at the age 40years or 10 years younger than earliest diagnosis in the family (whichever comes first) and repeated every 5 years. With FAP: flexible sigmoidoscopy to start at ages 10-12 years. Genetic testing, upper GI endoscopy with side viewing scope, should be done every 1-3 years. With HNPCC: colonoscopy every 1-2 years starting at ages 20-25yeras or 10 years younger than earliest diagnosis in the family (whichever comes first).

Personal History

ADENOMATOUS POLYPS: one or more polyp that are malignant or large and sessile-shot follow up; 3 or more polyps – 3 year follow up colonoscopy; 1 or 2 polyps <1cm- follow up 5-year colonoscopy. COLORECTAL CANCER: colonoscopy is incomplete at the time of diagnosis of colorectal cancer due to obstruction – repeat colonoscopy 6month after surgical resection;colonoscopy complete at the time of diagnosis – repeated at 3 years, if normal then every 5 years. IBD- surveillance colonoscopy is recommended. (15devita)

The value of symptoms as predictors of CRC is poor. In a recently published study, the median interval between symptoms and diagnosis was 128 days, because rectal cancer has well defined symptoms, such as rectal bleeding with or without changes in bowel habits, while colon cancer-related symptoms are very vague at the onset, and when the seriousness of symptoms require investigation, the disease is more advanced.[12]

An initial diagnosis of CRC can be made using colonoscopy, with biopsy and histological confirmation. On confirmation of carcinoma, computed tomography (CT) of the chest, abdomen and pelvis is recommended for initial preoperative evaluation, staging and optimal therapeutic planning. The accuracy of CT has been reported to be 67% for T staging, 69% for N staging and 95% for M staging.[13]

Management

Surgery is the cornerstone of treatment. Surgery includes complete mesocolic excision principle i.e, sharp dissection along the embryological planes within the mesofascial interface. extent of lymphadenectomy is still a controversial topic, because no evidence shows the beneficial impact of extensive (D3) versus more limited (D2) dissection on oncological outcome and however it might increase morbidity.Laparoscopy has become the standard technique for colon cancer in many countries worldwide. Surgery for rectal cancer is more complex. Total mesorectal excision is the standard oncological approach to rectal cancer, and extent of resection further depends on involvement of the sphincter complex and other surrounding structures. Colorectal cancer can also present as an emergency with obstruction or perforation. Colonic obstruction can be relieved by a decompressing colostomy.[14]

Adjuvant Therapy fluoropyrimidine-based chemotherapy has shown to improve survival in resected stage III, and in a subset of stage II colon cancers (eg, high-risk T4, poorly differentiated). Several landmark studies, including the MOSAIC study,has showed that the addition of oxaliplatin to a fluoropyrimidine (fluorouracil or capecitabine) as the new standard. For stage II tumours, presence of dMMR is a good prognostic sign and these patients do not benefit from adjuvant therapy.Deciding whether the therapy is going to be curative or palliative is crucial and depends primarily on the tumour burden. Patients might have few (or oligo) metastases that can be respected and rendered cured. A biologic (anti-VEGF or anti-EGFR antibody) is added to the chemotherapy regimen depending on tumour-specific and patient-specific factors.[14]

A complete pre-operative colonoscopy is necessary to perform a diagnostic evaluation of colon and rectum, allowing to detect the presence of synchronous lesions. Colonoscopy cannot be performed in case of obstructive neoplastic lesions or in case of megacolon, a double contrast barium enema or an intraoperative colonoscopy can be performed. Preoperative evaluation is important when a laparoscopic approach is planned, as the bowel cannot be palpated.[11]

The results of the study by wanbin et al, showed a similar short-term outcome of synchronous CRC and solitary CRC patients however, patients with synchronous CRC exhibited worse overall survival, disease free survival, and cancer specific survival than those with solitary CRC.[16]

Conclusion

Appropriate surgicalresection with colonoscopic examination of follow-upis recommended. If one of the synchronous cancers isearly-stage colorectal cancer, colonoscopic resection (endoscopicmucosal resection or endoscopic submucosalresection) may be used. Otherwise, dual colon resectionmay be needed if the synchronous cancers are a large distanceapart and at an advanced stage. Depending on theresources available, life-long clinical follow-up of somepatients with synchronous colorectal carcinoma may berecommended.

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