International Journal of Current Advanced Research
ISSN: O: 2319-6475, ISSN: P: 2319-6505, Impact Factor: 6.614
Available Online at www.journalijcar.org
Volume 8; Issue 05 (F); May 2019; Page No.18894-18896
DOI: http://dx.doi.org/10.24327/ijcar.2019.18896.3624

Research Article

SYNCHRONOUS OCCURENCE OF GASTROINTESTINAL STROMAL TUMOUR OF ILEUM AND COLONIC ADENOCARCINOMA IN A MIDDLE AGED MALE

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A R T I C L E I N F O

Article History:
Received 4th February, 2019
Received in revised form 25th March, 2019
Accepted 18th April, 2019
Published online 28th May, 2019

Key words:
Gist, Colon Adenocarcinoma, Synchronous

A B S T R A C T

The coexistence of Gastrointestinal stromal tumor (GIST) and colorectal adenocarcinomas has been rarely reported in the literature.We hereby report a case of 58 year old male presenting with chief complaints of constipation and malena who was diagnosed and operated primarily for colonic adenocarcinoma and synchronous occurence of GIST was found in ileum and confirmed on histopathological examination. To our knowledge synchronous occurrence of these two tumours is reported for the first time in north india.

INTRODUCTION

Gastrointestinal stromal tumors (GIST's) are rare mesenchymal neoplasms of the gastrointestinal tract (1) with a peak incidence in 6th and 7th decades of life. (2) There origin is believed to be from the interstitial cells of Cajal. (3) The coexistence of GIST and colorectal adenocarcinomas has been rarely reported in the literature. Most cases of associated GIST and Adenocarcinomas have been described in the stomach where GIST was discovered incidentally during an operation for primary gastrointestinal adenocarcinoma. (3)(4) Studies based on the expression of the c-kit proto-oncogene support the hypothesis of common carcinogenic etiology. However, the few published cases cannot rule out a possible incidental occurrence of GIST and adenocarcinoma. (5) The present case report highlights a incidental finding of ileal GIST in a 58 year old male who was operated primarily for colonic adenocarcinoma.

Case Report

A 58 year old male presented to gastrosurgery out patient department with chief complaints of pain in abdomen since 11 months alongwith malena since 8 months. Colonoscopy revealed a diffuse circumferential enhancing mass causing mural thickening and luminal narrowing of caecum and ascending colon with dialatation of proximal and distal bowel loaded with faecal contents. Few subcentimetric lymph nodes were also seen. A biopsy was taken and sent for histopathological examination which revealed microinvasive adenocarcinoma with possibility of arising in setting of Tubulovillous adenomatous polyp. Further patient was planned for hemicolectomy. Per-operative findings revealed a constrictive growth 5 cm away from hepatic flexure and measuring 5X4 cm. Also a globular growth was seen in ileum measuring 4X4 cm and 10 cm from proximal ileocaecal junction. So, resection of part of ileum and ascending colon was done and specimen was sent for histopatholgical examination.

Gross Findings

We received a segment of small and large intestine with appendix and attached mesentery measuring 38 cm in length and diameter ranging in size from 2cm to 4 cm. On cutting open ulcero-proliferative was seen in ascending colon measuring 3X2 cm. The growth was 14 cm from distal resection margin and 21 cm from proximal resection margin. Grossly the growth was not reaching upto serosa. Also a hard growth was seen in ileum approximately 4cm away from proximal resection limit. Cut section showed intact mucosa with submucosa showing a grey white hard growth.

Microscopic Examinations

Histopathological sections from ulcero-proliferative growth in colon shows a tumor arising from mucosa having pseudopapillary arrangement with back to back arranged glands. Individual cells depicted hyperchromasia, nuclear overcrowding, stratification, loss of polarity. Also is seen increased mitotic activity. The tumor was seen in submucosa and splitting into muscularis propria. Also small scattered tumoural seedlings were seen permeating into serosa. So, a diagnosis of Well differentiated Adenocarcinoma was kept.
Sections from grey white hard globular growth in ileum revealed a flattened lining epithelium with underlying

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submucosa showing a tumor arranged in form of interlacing fascicles of tumor cells. Individual tumor cells were spindle shaped having cigar to kinky nucleus having moderate amount of cytoplasm. So a diagnosis of Gastro Intestinal Stromal Tumor (GIST) was kept.

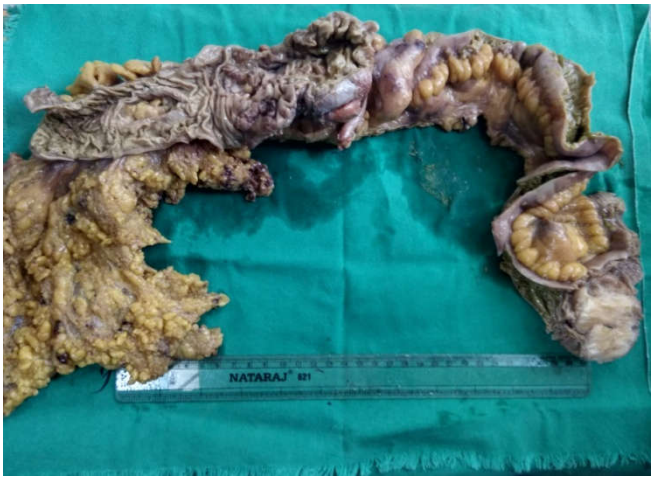

Figure 1 Photomicrograph of well differentiated adenocarcinoma of colon. Also seen is a part of normal colonic mucosal lining.

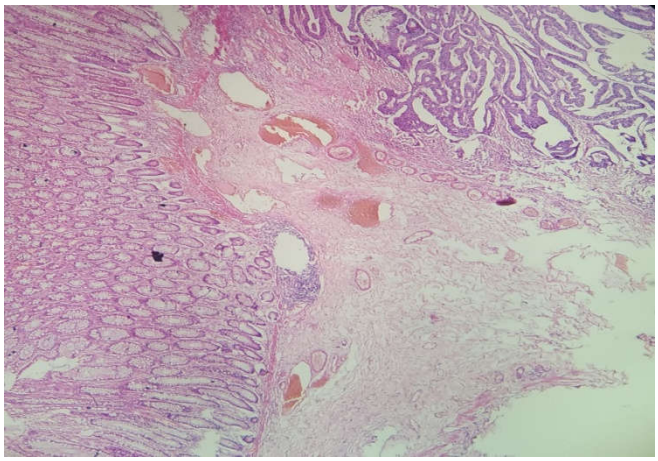

Figure 2 Gross picture of segment of small and large intestine with appendix and attached mesentery showing a ulceroproliferative growth in ascending colon alongwith submucosal grey white growth was in ileum.

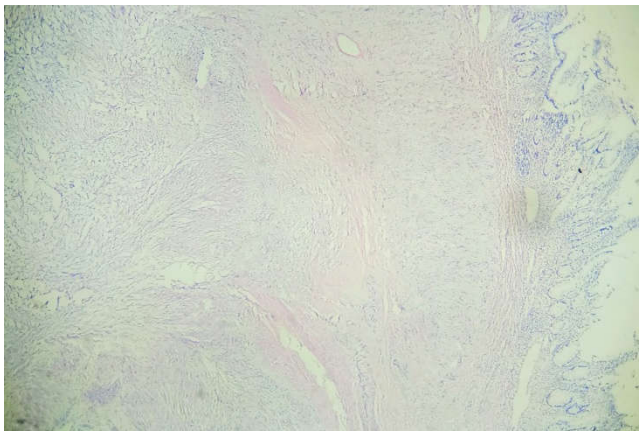

Figure 3 Photomicrograph of gastrointestinal stromal tumour beneath intact mucosa arranged in whorling pattern.

DISCUSSION

Gastrointestinal stromal tumors are common mesenchymal neoplasms occurring within the abdominal cavity. Most commonly GIST are located in the stomach followed by small intestine, colon. (3) Most cases are sporadic however, familial occurrence has also been reported. (6) In patients with Carney's triad, GISTs may develop together with pulmonary chondroma and extraadrenal paraganglioma. (7) The etiology may be represented by mutations in the c Kit gene or PDGFRA (platelet derived growth factor receptor alpha) gene and the origin of GIST is considered to be the interstitial cell of Cajal (8) The diagnosis is based on morphology and immunohistochemistry with c-Kit/CD117 positive in 95 % cases, CD34 positive in 40-50%, SMA (smooth muscle actin) positive in 20-30% and S100 in about 10% cases.

Most of these associated GISTs are asymptomatic and found during intraoperative examination of the abdomen. (9) In the study conducted by Wronski *et al*. on 28 patients with GISTs, four gastric stromal tumors (14% of patients) were found with a second neoplasm, including two gastric adenocarcinomas, one colon adenocarcinoma, and a gastric lymphoma. (10) A Hungarian study on 43 patients with GISTs, revealed seven patients with a second tumor, including three small intestinal GISTs occurring metachronous or synchronous with colorectal adenocarcinoma. (11) Melis *et al* also reported two cases of small bowel stromal tumor with synchronous invasive colon adenocarcinoma which is similar to our present case. (4) Various studies conducted have not been able to determine if the association between GIST and colonic adenocarcinoma is a simple coincidental coexistence or whether the 2 neoplasias are related. It is well known that c kit protein can be detected in 80% of benign and 90% of metastatic GIST; it is also believed that mutations of the kit proto-oncogene are the cause of GIST tumors. (12) There are reports that show 30% c-kit expression in colorectal malignancies which indicates somewhat a relation between these two malignancies. (12) However, there are other reports that contradict the hypothesis of common carcinogenic etiology by showing that the c-kit expression is very rare in colon cancer cell lines. (4) From all the above findings, genetic pathways seem to be different in these 2 neoplasias. It is obvious that further data are required to support the hypothesis of common carcinogenic etiology.

CONCLUSIONS

Accurate staging is essential because the dominant neoplasia usually determines the outcome. Further research is needed to clarify the role of oncogenic mutations and signalling pathways in carcinogenesis of neoplasia of different histiogenic origins.

Conflict of Interest

None.

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How to cite this article:

Bhaskar Jain and Sahil Chhabra (2019) 'Synchronous Occurence of Gastrointestinal Stromal Tumour of Ileum and Colonic Adenocarcinoma in a Middle Aged Male', *International Journal of Current Advanced Research,* 08(05), pp. 18894-18896. DOI: http://dx.doi.org/10.24327/ijcar.2019.18896.3624

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