International Journal of Medical and Pharmaceutical Case Reports
4(4): 87-91, 2015; Article no.IJMPCR.2015.067
ISSN: 2394-109X

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Gastric Outlet Obstruction as an Initial Presentation of Stage IV Colon Cancer Successfully Treated with Only Surgery with 4 Year Survival- A Case Study

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Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/IJMPCR/2015/17179
Editor(s):
(1) Rahul S. Khupse, Pharmaceutical Sciences, University of Findlay, USA.
Reviewers:
(1) Mohamed Hassan Emara, Tropical Medicine Department, Zagazig University, Egypt.
(2) Anonymous, University of the West Indies, West Indies.
(3) Georgios Tsoulfas, Department of Surgery, Aristotle University of Thessaloniki, Greece.
(4) Anonymous, McGill University, Canada.
(5) Anonymous, Japan Community Health Care Organization, Japan.
(6) Jaques Waisberg, Department of Surgery, ABC Medical School, Santo André, São Paulo, Brazil.
Complete Peer review History: http://sciencedomain.org/review-history/9830

Case Study

Received 1st March 2015
Accepted 5th May 2015
Published 18th June 2015

ABSTRACT

Introduction: Gastric outlet obstruction (GOO) is an unusual initial presentation of locally advanced colorectal cancer (CRC).
Case Description: A 76-year-old male presented with nausea, vomiting, and weight loss. Physical exam was remarkable for cachexia and epigastric tenderness. Blood analysis was remarkable for microcytic anemia. CT scan of abdomen revealed a soft tissue mass surrounding the pylorus of the stomach and a concentric mass-like thickening in the transverse colon with lymphadenopathy. Colonoscopy revealed a partially obstructive and fungating mass in the transverse colon. Biopsy confirmed invasive adenocarcinoma. The patient underwent extensive surgery. However, due to a poor performance status, he did not receive adjuvant chemotherapy. He continues to survive 4

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years post-surgery, without any evidence of recurrence.
Conclusion: Surgical resection of locally advanced stage IV CRC causing acute GOO in the patient with poor performance status can lead to prolonged disease free survival in individual cases after curative surgery, even without adjuvant chemotherapy.

Keywords: Colon cancer; GOO; survival; locally advanced colon cancer; surgery.

1. INTRODUCTION

Gastric outlet obstruction (GOO) is an unusual presentation of locally advanced stage IV colorectal cancer (CRC). Initial presentation, performance status and the extent of local invasion of tumor in advanced stage IV CRC influence the decision to surgically resect the tumor with or without chemotherapy [1]. However, we present a case in which en block resection of a locally advanced stage IV CRC lead to disease-free survival of 4 years, even without chemotherapy.

2. CASE PRESENTATION

A 76 year old male with past medical history of controlled hypertension and diabetes mellitus presented to the emergency department with a complaint of nausea and vomiting for one week, associated with early satiety, belching, bloating and a sour taste in the mouth. In the last one year, the patient had unintentional weight loss of more than 30 pounds. His appetitewas preserved and he denied dysphagia or odynophagia. He experienced fatigue and weakness over one year prior to his presentation to the hospital. On admission, the patient's vital signs were stable and he appeared cachectic. Abdominal exam revealed a soft abdomen with mild epigastric tenderness on deep palpation. There was no rebound tenderness or guarding. Laboratory studies were remarkable for anemia with a hemoglobin level of 6.5 gm/dL and mean corpuscular volume of 75. An abdominal CT scan revealed a large soft tissue mass surrounding the pylorus of the stomach, likely causing the patient's gastric outlet obstruction (Fig. 1), and a concentric mass in the transverse colon extending over at least 11 cm with intra-abdominal lymphadenopathy (Fig. 2). The patient underwent esophagogastroduodenoscopy (EGD) on the next day, which revealed a large gastric mass (4-5 cm) in the antrum, partially obstructing the pylorus. No mucosal abnormality was identified, though the mucosa appeared to be compressed by an extrinsic mass.Biopsies were taken during the EGD procedure, but did not show any abnormality. Since the mass was extrinsic, a decision was made to proceed with colonoscopy. Colonoscopy revealed a partially obstructive, fungating and ulcerative mass in the transverse colon, which was invading the local area. Biopsy of the mass revealed a moderately to poorly differentiated invasive adenocarcinoma. The patient underwent en block resection of the lesion with gastrojejunostomy (Billroth 2) andan extended right hemicolectomy. Due to the presence of dense adhesions at the splenic flexure, an end ileostomy and Hartmann's closure of the rectum were performed. The tissue margins of the specimen (proximal, distal, radial and stomach) were free of tumor. Metastatic adenocarcinoma was found in the stomach, whereas theprimary tumor originated in the transverse colon. Eighteenlymph nodes sampled after surgery were negative for tumor involvement. The patient was staged as pT4b N0 M1a (according to AJCC 7th edition) [2]. Adjuvant chemotherapy was not given, since the patient scored a 3 on the Eastern Cooperative Oncology Group (ECOG) Performance Status Scale [3]. The patient was discharged to home and was followed up at the gastroenterology and oncology clinic.

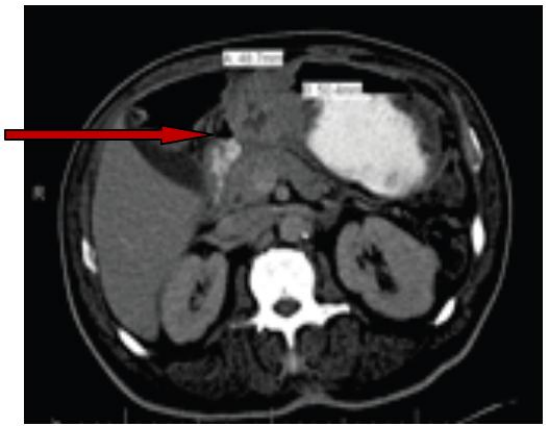

Fig. 1. CT abdomen showing 5.0 cm by 4.9 cm soft tissue mass surrounding the pylorus of the stomach

The patient had several admissions to the hospital over the following year for dehydration secondary to high output from the stoma site. He had a 15-poundweight loss over that year. Chemotherapy was further withheld. A follow-up PET scan one year after the surgery revealed increased metabolic activity in one mediastinal lymph node and stable intra-abdominal lymphadenopathy. Endobronchial ultrasound-guided biopsy of the mediastinal lymph node was negative for malignant cells. Annual PET scans did not show any recurrence of the CRC for 3 years. CEA levels were within normal range as well. The patient had a left-sided inguinal hernia that could likely complicate a colonoscopy procedure, so surveillance colonoscopy was not done until follow-up at 48 months after the diagnosis. The patient continued to maintain a good quality of life without any evidence of tumor recurrence, as of his most recent follow-up 4 years post-surgery.

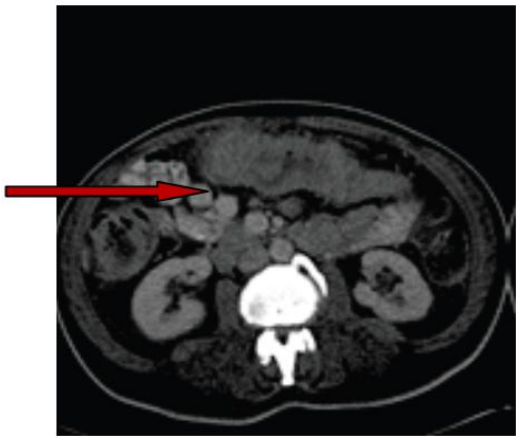

Fig. 2. CT abdomen showing the concentric mass like thickening of the transverse colon extending over at least [11] cm in transverse colon highly suggestive of neoplasm

3. DISCUSSION

Obstructive symptomsas an initial presentation of colon canceroccur in 7-29% of patients and usually involve the small or large bowel by intraluminal wall cancer infiltration [4]. Gastro-duodenal obstruction represents a pre-terminal event in patients with advanced malignancies. GOO caused by metastatic CRC is rare, occurring in less than 10% of obstructing lesions, and is usually reported assubacute GOO [4-8]. In very rare cases it presents as acute GOO, as it was in the case presented here.

Treatment decisions regarding metastatic CRC depend on presence of symptoms, such as bleeding, obstruction or perforation, and whether or not metastases are the present. However, this decision can be challenging in elderly patients, whose performance status and comorbidities must betaken into consideration. Primary tumor resection, male gender, elevated CEA levels and elevated AST levels were found to be independent poor predictors of overall survival in elderly patients with stage IV CRC [9]. Primary tumor location and ECOG performance status influence the decision regarding primary tumor resection. Patients with right-sided colon cancer and rectal cancer more frequently undergo primary tumor resection, and patients with good performance status have a greater chance of undergoing primary tumor resection [9]. Curative or palliative surgical resection of a stage IV colon cancer causing acute obstruction is a desirable option. However it is accompanied by high morbidity and mortality, especially in patients with poor performance status. Hence it remains challenging to make a decision, even if a patient is a suitable surgical candidate [10]. The addition of chemotherapy to the management of these patients is ideal since systemic treatment prior to resection has been shown to result in tumor regression in 70% of patients.Median survival in patients with advanced CRC without any form of treatment is 8 months [11]. A recent multicenter randomized trial including patients with stage IV CRC did not show any benefits for global health status, 30 day mortality, morbidity, other quality-of-life indicators, and stoma rates in patients who underwent emergent surgery compared to those who had transnasal self-expandable metallic stent (SEMS) placed [12,13]. The main intent of surgery is to prevent possible complications such as bleeding, obstruction and perforation. Kleespies et al. [1] have found that palliative resection is associated with unfavorable outcome in CRC patients presenting with a locally advanced tumor (pT4) or extensive comorbidity, therefore advising that surgery might be contraindicated unless the tumor is immediately life-threatening. Our patient had locally advanced CRC, which presented as acute GOO with poor performance status, and as such was considered a high risk for postoperative complications with poor survival. One may argue whether surgery should have been performed in the first place. Since he was not candidate for chemotherapy, due to poor performance status, surgery was the only option available. His survival has been longer than expected for locally advanced stage IV CRC, while maintaining an ECOG

performance status of 2-3 even 4 years after the surgery.

4. CONCLUSION

Initial presentation of stage IV colon cancer as GOO is very unusual and rare, with a very poor outcome and lifetime expectancy. However, we present a rare case in which stage IV locally advanced colon cancer of elderly male patient who initially presented with acute GOO was successfully cured by only surgical resection, without chemotherapy. Furthermore, he has survived for over 48 months thus far, longer than expected, and without evidence of recurrence.

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that "Principles of laboratory animal care" (NIH publication No. 85-23, revised 1985) were followed, as well as specific national laws where applicable. All experiments have been examined and approved by the appropriate ethics committee.

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki."

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
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