

Complete small bowel obstruction caused by metastasis from primary nasopharyngeal carcinoma

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Abstract

We here report the first case in the literature on a surgical emergency of complete small bowel obstruction caused by metastasis from nasopharyngeal carcinoma nine months after the primary tumor was treated with concurrent chemoradiation. The patient achieved prolonged survival with prompt surgical treatment followed by systemic chemotherapy.

Introduction

Cancers involving the bowel are usually primary large or small bowel cancers, direct invasion from primary cancers arising from other abdominal organs or peritoneal carcinomatosis. Metastatic cancer from malignancy outside the abdomen involving the intestinal mucosa is relatively uncommon although it is well reported in the literature, and can be associated with multiple surgical emergencies including intestinal bleeding, perforation, or intussusception. Small bowel obstruction caused by metastatic lesion from other primary cancer is a rare event. Idelevich *et al.* reviewed the literature and found that between 1988 and 2005, only 36 such cases have been reported.¹ Interestingly, the most common primary cancer in these cases was lobular breast carcinoma (47%), followed by lung cancer (11%) and malignant melanoma (8%).

These cases can occur after patients have been in remission for many years^{2,4} and can be the first site of disease presentation.⁵ Because of its rarity, recurrent metastatic disease as the cause of small bowel obstruction in patients who have been in remission for their primary cancer was not immediately suspected and it was known only during pathological assessment of the resected specimen. We here report a case of complete small bowel obstruction caused by recurrent metastatic disease from a patient who has been treated for primary nasopharyngeal carcinoma.

Case Report

A 58-year old man with good past health presented with a one year history of episodic epistaxis in June 2007. On examination he was found to have bilateral cervical lymphadenopathy. Endoscopic examination of the nasopharynx revealed a nasopharyngeal tumor biopsy which showed undifferentiated carcinoma. Computer tomography (CT) of the head and neck region showed a tumor mass extending up to the base of skull and down to the hard palate, with parapharyngeal extension and involvement of the cervical lymph nodes bilaterally. Whole-body positron emission tomography (PET) scan showed no metastatic disease elsewhere. The patient was diagnosed to have locally advanced nasopharyngeal carcinoma (NPC) of UICC/AJCC (International Union Against Cancer and American Joint Committee on Cancer) stage T2bN2 and he was treated with concurrent chemoradiation with weekly cisplatin. He was in clinical remission for nine months after his treatment until he developed symptoms of acute intestinal obstruction with abdominal pain and distention. Abdominal X-ray showed dilated small bowel loops. He underwent urgent laparotomy and intra-operatively he was found to have a lesion completely obstructing the distal small bowel. The lesion was resected and resection was followed by primary bowel anastomosis (Figure 1). The patient recovered well one month after his operation. Microscopic examination of the small bowel lesion showed undifferentiated carcinoma and the tumor cells were immunohistochemically positive for cytokeratin and c-kit.

Fluorescence *in situ* hybridization (FISH) of Epstein-Barr Virus (EBV) encoded RNA (EBER) was also positive in the tumor cells (Figure 2). The histology of the small bowel lesion was compared to the initial nasopharyngeal carcinoma biopsy specimen and they were similar. Plasma EBV-DNA was found to be elevated to 150,473 copies/mL and PET scan showed high FDG uptake (maximum SUV 17.7) at the retroperitoneal lymph nodes consistent with metastatic disease at these sites. The patient was subsequently treated with three cycles of combination chemotherapy with paclitaxel and carboplatin three-weekly. Repeated whole body PET scan showed complete remission with no residual disease detectable. Plasma EBV-DNA level also decreased to 900 copies/mL. Although the patient had progressive disease subsequently, his metastatic disease remained responsive to further lines of chemotherapy with capecitabine and gemcitabine and he remains well at the present time with preserved quality of life.

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Discussion

Small bowel metastases from primary head and neck cancer is extremely rare. Among the few reported cases, the majority of them were from cancer of the larynx.^{6,7} Guillem *et al.* analyzed a 10-patient series which showed that small bowel metastases from head and neck cancers occurred more commonly in old male patients (mean age 71 years).⁸ They were usually discovered because of occlusive, perforative or bleeding symptoms and complications. Perforation more commonly occurred at jejunal metastases while clinical bleeding and occlusion more commonly occurred at ileal metastases. In any case, the diagnosis of small bowel metastases from head and neck cancer carried poor prognosis. In these 10 patients, deaths occurred within eight months following diagnosis, either due to post-operative complications or cancer progression.

To our knowledge, we report the first case of small bowel metastasis from primary nasopharyngeal carcinoma. Nasopharyngeal carcinoma (NPC) is an endemic subtype of head and neck cancer in South East Asia especially the southern part of China. In contrast to other types of head and neck cancer, NPC has a special viral etiology with strong association with EBV infection.⁹ The other special feature of NPC is



Figure 1. Specimen resected during laparotomy. A lesion is found completely obstructing the small bowel macroscopically.

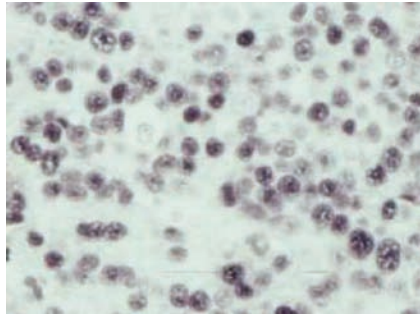


Figure 2. Microscopic examination of the resected specimen. Poorly differentiated carcinoma cells stained strongly for Epstein-Barr virus-encoded RNA (EBER).

its chemosensitivity.¹⁰ Common sites of metastases from primary nasopharyngeal carcinoma include regional lymph nodes, bone, lung, and liver. Although poor prognosis and short survival was reported in small bowel metastases from head and neck cancer, for our patient prompt surgical treatment for the abdominal emergency followed by systemic chemotherapy for residual metastatic disease resulted in good outcome, as illustrated by an initial radiological complete remission given that NPC is a chemosensitive type of cancer. Our patient has survived at least 22 months till the present time with good quality of life.

Conclusions

Although small bowel metastases from primary cancer outside the abdomen is relatively

uncommon, prompt recognition and treatment of an abdominal emergency secondary to these metastases can result in good outcome, especially for a cancer that shows high response rate to systemic chemotherapy. Clinicians need to be vigilant on unusual or unexplained abdominal symptoms arising from patients with malignancy outside the abdomen.

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