

A case report of gastric cancer with brain metastasis

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ABSTRACT

It's rare for gastric cancer to present with brain metastasis. A case of gastric cancer with multiple brain metastases is described in the current investigation. To the best of our knowledge, there are very few reports of brain metastasis from gastric cancer. In April 2021, a 48-year-old man presented with complaints of abdominal pain, headache, lack of appetite, and weight loss history. Diagnosed as a case of moderately differentiated, Her₂ neu negative gastric cancer with liver and brain metastasis after workup. Brain metastasis was confirmed through contrast-enhanced magnetic resonance imaging. The patient was treated with palliative fluorouracil, oxaliplatin, and docetaxel regimen of chemotherapy and whole-brain radiation at a total dose of 30 gray in 10 fractions. The patient survived for the next 19 months. According to this case study, gastric cancer may present with a brain metastasis and survival of those patients can be increased if given the advantage of radiotherapy and palliative chemotherapy.

Key words: Brain, Gastric cancer, Malignancy, Metastasis

According to the GLOBOCAN 2020, gastric cancer is the fifth most common malignancy in the world [1]. In India, gastric cancer is also within the top 5 common malignancies as per the National Cancer Registry Program [2]. Gastric cancer generally metastasizes to abdominal lymph nodes, liver, and peritoneum [3]. Brain metastasis is rare in gastric cancer almost <1% [4]. Treating physicians mostly consider brain metastasis at the last stage and give the patient the best supportive care. This approach at times denies some patients advantages of whole-brain radiotherapy (WBRT) and palliative chemotherapy.

Our case report is a perfect example of the benefit of these modalities.

CASE REPORT

A 50-year-old male patient presented with a chronic complaints of nausea, vomiting, and epigastric pain for the past 3 months and an acute complaint of headache with episodic loss of consciousness for the past 7 days. There was no history of peptic ulcer, cholelithiasis, or any other gastrointestinal-specific complaint. The patient was non-vegetarian by diet and had no history of gastric cancer in the family.

On physical examination, the patient was oriented to time, place, and person with a Glasgow Coma Score of 15/15 and

Karnofsky performance status of 80. On systemic examination, respiratory and cardiovascular were within normal limits. On central nervous system examination, the patient had severe headaches, and there were no sensory or motor function deficits. The cerebellar function was intact and no such cognitive issues were felt.

The patient then underwent contrast-enhanced computed tomography (CECT) thorax abdomen and contrast-enhanced (CE) magnetic resonance imaging (MRI) brain in view of the presenting complain. CECT abdomen showed antropyloric growth in stomach later confirmed by upper gastrointestinal endoscopy (UGI) and there was no lung metastasis in CECT Thorax (Fig. 1). Biopsy was taken during UGI, which later confirmed it as HER2 NEU negative moderately differentiated adenocarcinoma.

Tumor marker carcinoembryonic antigen level was at 270 ng/mL (normal range, <0.5 ng/mL). CE MRI brain showed multiple brain metastasis involving different lobes of the brain. After the workup, the patient was finally staged as a case of metastatic moderately differentiated HER2 neu-ve stomach cancer with multiple brain metastasis.

The patient was planned for palliative care with palliative WBRT followed by palliative chemotherapy. The patient was given a total dose of 30 Gray in 10 fractions, over 2 weeks as WBRT with 10 mg memantine OD for 24 weeks. After completion of radiation treatment of 2 weeks, the patient was referred to

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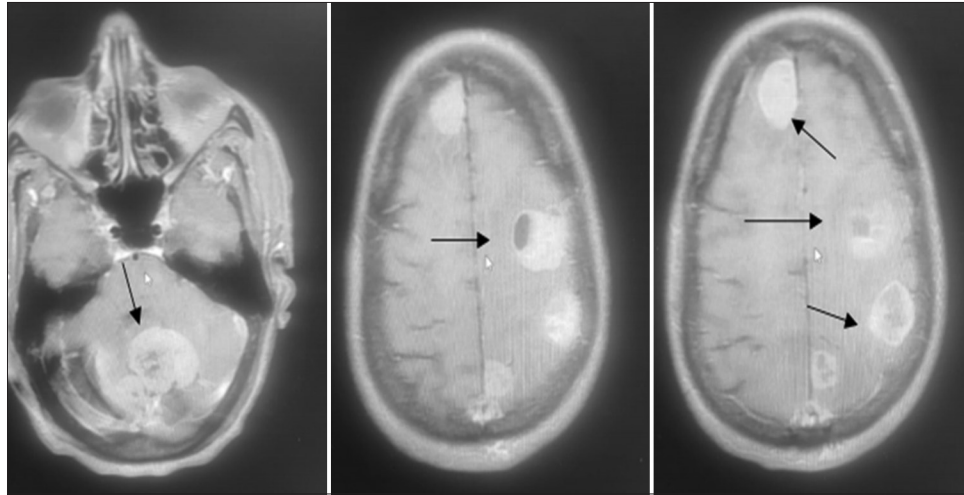


Figure 1: Contrast-enhanced magnetic resonance imaging brain showing metastasis in different lobes of the brain

medical oncology for palliative chemotherapy. The patient was given 6 cycles of palliative fluorouracil, oxaliplatin, and docetaxel (FLOT) regimen chemotherapy which he tolerated well. The patient was planned for response assessment post 2 months of completion of chemotherapy but defaulted for the next 15 months in view of personal family reasons.

The patient finally presented in the emergency after 15 months of default with the poor general condition, Eastern Cooperative Oncology Group 4, and difficulty in breathing. Emergency treatment as per requirement was given and planned for a detailed metastatic workup. In view of the extensive poor general condition, the patient expired in the next 2 days.

DISCUSSION

There are very few incidences of brain metastases associated with gastric cancer, which is estimated to be <1% of cases [5]. The initial signs of brain metastases are commonly headaches, mental status changes, migraine, vision problems, and decline neurocognition [6]. In this case, as the patient upfront presented with brain metastasis, not much option was left for the treating physician. The patient was given the benefit of whole-brain radiation. The patient did improve symptomatically after whole brain radiation. Memantine was also added to preserve neurocognitive decline [7]. The patient was then treated with a palliative FLOT chemotherapy regimen and responded well. Usually, the median survival of patients with metastatic gastric cancer is limited to 6–7 months only and brain metastasis patient survival itself is 8–9 months [8]. Due to heterogeneity in tumor presentation, patient profile, molecular marker, patient status, and clinical stage, treatment has to be case to case basis. In our case, due to multiple brain metastases whole brain radiation was the most appropriate option. Hippocampal sparing was not attempted due to the close proximity of the tumor to the para-hippocampal area.

Our study presents a rare case of gastric cancer with brain metastasis. The present case report highlights several interesting

findings. Gastric cancer can present with brain metastasis upfront. These patients should be given the advantage of whole-brain radiation and memantine. Despite limited survival in the literature for this type of patient, our patient survived for duration of 14–15 months. Whether this improvement in overall survival was due to palliative chemotherapy or not requires more case series to comment on. Since there was an improvement in survival, we will recommend WBRT+memantine for patients to improve survival. Thus, the current case report raises awareness that gastric cancer may present with brain metastasis and should be given the advantage of WBRT, memantine, and palliative chemotherapy.

CONCLUSION

Although brain metastasis associated with gastric cancer is rare, no uniform guideline exists for the treatment approach. Patients should be given the benefit of palliative chemotherapy followed or preceded by brain radiotherapy and memantine. All efforts should be made to preserve patient neurocognition by Hippocampal sparing, if possible, the addition of memantine or stereotactic body radiotherapy/stereotactic radiosurgery. The current patient is an outstanding example of the beneficial use of WBRT, memantine, and palliative chemotherapy for longer survival time.

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