Squamous cell lung carcinoma presenting as melena: a case report and review of the literature

Ibrahim Azar,¹ Efstratios Koutroumpakis,¹ Raina Patel,² Syed Mehdi³
¹Department of Internal Medicine, Albany Medical Center; ²Department of Pathology, Stratton Veterans Affairs Medical Center, Albany; ³Division of Hematology-Oncology, Department of Internal Medicine, Stratton Veterans Affairs Medical Center, Albany, NY, USA

Abstract

Lung cancer has a predilection to widely metastasize to the liver, bone, brain and adrenal glands. Metastasis of primary lung tumors to the stomach is infrequent, with only sporadic cases reported. Most cases are asymptomatic and diagnosed post-mortem on autopsy. The incidence of symptomatic gastrointestinal metastases is extremely rare. Herein, we describe a case of gastric metastasis by squamous cell lung carcinoma, presenting as melena and diagnosed by esophagogastroduodenoscopy. To the best of our knowledge, only twenty other cases in the English literature have reported symptomatic gastric metastasis of lung cancer diagnosed by endoscopic biopsy. A brief review of the literature shows gastric metastasis of lung cancer to have a predilection to occur most frequently in male smokers with the most common type of tumor likely to be squamous cell carcinoma.

Introduction

Lung cancer is the most common cancer worldwide and the leading cause of tumor-related deaths. It has a predilection to widely metastasize to the liver, bone, brain and adrenal glands. Metastasis of primary lung tumors to the gastrointestinal tract is infrequent, with only sporadic cases reported. The incidence of symptomatic gastrointestinal metastases is extremely rare. In this report, we describe a case of a squamous cell lung carcinoma with metastasis to the stomach.

Case Report

A 90-year-old man with a history of left upper lobe pulmonary nodule on prior imaging presented with dark tarry stools, fatigue and repeated falls that progressively became worse over a one-month period. A week prior to presentation, he had a syncopal episode. He had not had an EGD or colonoscopy done in about 10 years. His social history is notable for a remote history of smoking.

Five months prior to this presentation, a 2.4 cm left upper lobe pulmonary nodule suspicious for neoplasm was incidentally found on CXR. The patient had declined any invasive procedures and opted to monitor the nodule thru serial chest computer tomography (CT) scans (Figure 1A). Two months later, new scattered 8 mm hepatic nodules and a 3 cm lymph node were found on CT scan. His hematocrit was 18.1%. His esophagogastroduodenoscopy showed an ulcer at the greater curvature of the stomach. The ulcer had a clean base, no stigmata of bleeding and no evidence of perforation. His breath sounds were diminished on the left lower lobe. He had an ecchymosis over his left leg, dusky conjunctivae and dry mucous membranes. His blood was examined over the anterior abdomen that was non-tender. FOBT was positive on rectal exam. His labs showed a hemoglobin of 5.7 g/dL and a hematocrit of 18.1%. His esophagogastroduodenoscopy (EGD) showed an obstructing, non-bleeding, cratered gastric ulcer at the greater curvature of the stomach body. The ulcer had a clean base, no stigmata of bleeding and no evidence of perforation. A gastric ulcer biopsy showed metastatic squamous carcinoma involving the base of the gastric mucosa without surface involvement on hematoxylin and eosin stain (Figure 2). Although the standard of care for stage IV Squamous Cell Lung Cancer is combination chemotherapy with platinum doublet, he was referred to palliative care given patient’s extremely poor functional status. He passed away 54 days after his presentation with GI bleed. The family declined an autopsy.

Discussion

Lung cancer most commonly metastasizes to liver, adrenal glands, bone and brain. Metastasis to the GI system is considered uncommon; although a higher prevalence has been reported on autopsies (14%). Symptomatic manifestations of GI metastasis are rare with only a few cases published. Of the GI sites where lung cancer metastasizes, stomach is an extremely rare site and is usually discovered on autopsies (<2%). To the best of our knowledge, 20 cases in the English literature have reported symptomatic gastric metastasis of lung cancer diagnosed by endoscopic biopsy. Here, we report a case of squamous cell lung carcinoma metastasizing to the stomach along with a brief review of the cases reported in the literature (Table 1).

Squamous cell carcinoma has been reported as the most common type of lung cancer metastasizing to the entirety of the GI system. Our case, along with the majority of gastric metastases reported in literature (Table 1) support the case of Squamous cell carcinoma also being the most common type of lung cancer metastasizing to the stomach. Surprisingly, the second most com-
Table 1. Reported cases of symptomatic metastatic squamous cell lung carcinoma to the stomach in the English literature.

| Author  | Age | Sex | Smoking | Cancer cell type | Primary location | Clinical presentation | Gastric location | Other metastatic sites | Time between discovery and death |
|---------|-----|-----|---------|------------------|------------------|----------------------|------------------|------------------------|----------------------------------|
| Azar    | 90  | M   | Y       | Squamous cell    | LUL              | Melena               | Greater curvature | Liver                  | 54 days                          |
| Yang 1   | 71  | M   | Y       | Squamous cell    | LLL              | Melena               | -                | None                   | 136 days                         |
| Yang 2   | 65  | M   | Y       | Squamous cell    | RML              | Melena               | -                | Pleural effusion, bone | 90 days                          |
| Yang 3   | 62  | M   | Y       | Adenocarcinoma   | RUL              | Melena               | -                | Bone                   | 371 days                         |
| Casella  | 63  | M   | Y       | Small cell       | LU hilar region  | Epigastralgia, constipation | Gastric Corpus | LNs, pleural effusions, liver | 1 month                          |
| Suzuki 4  | 45  | M   | -       | Adenocarcinoma   | RML              | Perforation           | Greater curvature | None                   | 13 days                          |
| Kim 11    | 70  | M   | Y       | Squamous cell    | LLL              | No symptoms           | Greater curvature | LNs, spleen, pancreas | 11 months                        |
| Maeda 8   | 60  | F   | -       | Small cell       | RLL              | Nausea, vomiting      | Gastric corpus & greater curvature | -                  | None                             |
| Kim 10    | 67  | M   | N       | Adenocarcinoma   | LUL              | Abdominal pain        | -                | Lung                   | 80 days                          |
| Kim 21    | 72  | M   | Y       | Large cell       | RUL              | No symptoms           | -                | Lung, brain, adrenal gland | 67 days                          |
| Alpar 22  | 66  | M   | Y       | Squamous cell    | RUL              | Epigastralgia, vomiting | -                | Liver, LNs             | 2 months                         |
| Hamatake 24 | 65  | M   | Y       | Adenocarcinoma   | LLL              | Hematnemesis          | Gastric corpus    | Lingula, Chest wall | 147 days                         |
| Schmidt 20 | 61  | M   | -       | Adenocarcinoma   | Left hilum       | Epigastralgia         | Gastric fundus   | LN, Brain              | 21 days                          |
| Yamamoto 19 | 80  | M   | Y       | Adenocarcinoma   | Left lung        | Epigastralgia         | Upper stomach    | Brain                  | 18 months                        |
| Kadakia 5  | 60  | M   | -       | Squamous cell    | -                | Acute GI bleed        | Gastric corpus   | -                      | -                                |
| Kadakia 2  | 56  | M   | M/F     | Squamous cell    | -                | Acute GI bleed        | Gastric corpus   | -                      | -                                |
| Kadakia 3  | 56  | M   | M/F     | Squamous cell    | -                | Anorexia, wt loss, IDA | Gastric Antrum  | Duodenum               | -                                |
| Aokage 15 | 69  | M   | -       | Pleiomorphic     | RUL              | Fatigue, severe anemia | Anterical wasl of md-stomach | -                  | None                             |
| Aokage 16 | 62  | M   | -       | Squamous cell    | LUL              | Nos                   | Gastric fundus   | None                   | 4 years                          |
| Miyazaki 17 | 54  | M   | -       | Squamous cell    | RUL              | Epigastralgia, anemia | Gastric Antrum  | Colon, liver           | -                                |

- unknown or not reported; Sx: Symptoms; LNs: Lymph nodes; M: Male, Y: Yes.
FDG-PET/CT.

Metastasis to the stomach can arise from any lobe of the lung (in our case LUL); but so far only 2 cases\textsuperscript{7,10} reported a gastric metastasis with a hilar primary. In contrast to esophageal metastases which is thought to be through direct extension, metastasis to the stomach, just like bowel is through hematogenous and lymphatic routes. Figure 2B suggests that, in our case, metastasis occurred hematogenously, either intravascularly or through lymphatics. The most common site of metastasis appears to be the gastric corpus; while our case’s site of metastasis was the greater curvature.

The higher prevalence of GI metastases found on autopsies compared to the reported cases diagnosed by endoscopy suggests metastasis to GI might be a late event in the evolution of the tumor. The presence of other sites of metastases in our case and most of the literature supports this hypothesis. Interestingly, while a bull’s eye target lesion is a well-established radiologic sign of metastasis, metastasis to the stomach does not show this sign on imaging.

Metastasis to the GI system is associated with poor prognosis.\textsuperscript{12} A study by Yang showed a relatively longer survival rate for metastasis to the stomach than other sites, especially in 2 cases of squamous cell carcinoma. By comparison, our patient had a much shorter time until death (54 days vs 136 and 90) which could be explained by his older age (90 y-o vs 71 and 65). Interestingly, the only 2 cases with a good prognosis (>4 years survival rate) were the pleiomorphic tumors reported by Aokage.\textsuperscript{5}

Conclusions

Overall, we report here a rare case of metastasis of Squamous Cell Lung Carcinoma to the stomach presenting as melena and review the literature on gastric metastases of lung cancers. While gastric metastasis of lung tumors is very rare, it should be considered in patients with known lung masses presenting with melena. We find gastric metastases of lung tumors to have a predilection to occur in male smokers with the most common type of tumor likely to be squamous cell carcinoma. The most common presentations are epigastric pain and melena. Our conclusions are limited by the small number of reported cases.

References

1. Antler AS, Ough Y, Pitchumoni CS, et al. Gastrointestinal metastases from malignant tumors of the lung. Cancer 1982;49:170-2.
2. Berger A, Cellier C, Daniel C, et al. Small bowel metastases from primary carcinoma of the lung: clinical findings and outcome. Am J Gastroenterol 1999;94:1884-7.
3. McNeill PM, Wagman LD, Neifeld JP. Small bowel metastases from primary carcinoma of the lung. Cancer 1987;59:1486-9.
4. Yang CJ, Hwang JJ, Kang WY, et al. Gastro-intestinal metastasis of primary lung carcinoma: clinical presentations and outcome. Lung Cancer J 2006;54:319-23.
5. Aokage K, Yoshida J, Ishii G, et al. Long-term survival in two cases of resected gastric metastasis of pulmonary pleomorphic carcinoma. J Thorac Oncol 2008;3:796-9.
6. Kim MS, Kook EH, Ahn SH, et al. Gastrointestinal metastasis of lung cancer with special emphasis on a long-term survivor after operation. J Cancer Res Clin Oncol 2009;135:297-301.
7. Casella G, Di BC, Cambareri AR, et al. Gastric metastasis by lung small cell carcinoma. World J Gastroenterol 2006;12:4096-97.
8. Maeda J, Miyake M, Tokita K, et al. Small cell lung cancer with extensive cutaneous and gastric metastases. Internal Med 1992;31:1325-8.
9. Fletcher MS. Gastric perforation secondary to metastatic carcinoma of the lung: a case report. Cancer 1980;46:1879-82.
10. Schmidt G, Borsch G, Von Liebe S, Bohm E. Gastric perforation secondary to metastatic bronchogenic carcinoma. Hepato-gastroenterol 1985;32:103-5.
11. Suzuki N, Hiraki A, Ueoka H, et al. Gastric perforation due to metastasis from adenocarcinoma of the lung. Anticancer Res 2002;22:1209-12.
12. Kim YI, Kang BC, Sung SH. Surgically resected gastric metastasis of pulmonary squamous cell carcinoma. World J Gastrointest Surg 2013;5:278-81.
13. Alpar S, Kurt OK, Ucar N, et al. A case of squamous cell lung carcinoma with

![Figure 2. Histopathological examination: hematoxylin and eosin stain showing invasive squamous cell carcinoma under uninvolved gastric mucosa. Low (A) and High (B) magnification.](image-url)
gastric metastasis. South Med J 2006;99:1313-4.
14. Hamatake M, Ishida T, Yamazaki K, et al. Lung cancer with p53 expression and a solitary metastasis to the stomach: a case report. Ann Thorac Cardiovasc Surg 2001;7:162-5.
15. Yamamoto M, Matsuzaki K, Kusumoto H, et al. Gastric metastasis from lung carcinoma. Case report. Hepatogastroenterol 2002;49:363-5.
16. Kadakia SC, Parker A, Canales L. Metastatic tumors to the upper gastrointestinal tract: endoscopic experience. Am J Gastroenterol 1992;87:1418-23.
17. Miyazaki J, Hirota S, Abe T. Metastasis of lung cancer to the gastrointestinal tract, presenting with a volcano-like ulcerated mass. Dig Endosc 2015;27:397-8.