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Solitary Splenic Metastasis from Primary Non Small Cell Carcinoma of the Lung

Mehmet HEPGUR[1], Mohammad A. NOOR[2], Anthony DePLATO[1]

[1] University at Buffalo, State University of New York, Department of Medicine
[2] Veteran Administration Medical Center, Department of Medical Oncology and Hematology, Buffalo, New York, USA

ABSTRACT

Metastatic disease of the spleen is uncommon and associated with widely disseminated disease. Isolated metastases are extremely rare and are restricted to anecdotal reports in medical literature. Patients are usually asymptomatic or have nonspecific symptoms such as vague abdominal pain and fatigue. We report a 74 year old man who presented with abdominal pain weight loss and was diagnosed with isolated splenic metastasis from primary non small cell carcinoma of the lung.

Keywords: Solitary splenic metastasis, Non small cell lunc cancer

ÖZET

Küçük Hücreli Dışı Akciğer Kanserinin Soliter Splenik Metastazı

Dalağın metastatik tümorleri oldukça nadirdir ve genellikle hastalığın ilerlemiş dönemlerinde görülür. Dalağın izlole metastazları daha da nadirdir ve tıbbi literatürde az sayıda vaka sunumu olarak bulunmaktadır. Genellikle hastalar asemptomatiktir ya da karın ağrısı, yorgunluk gibi spesifik olmayan semptomlar mevcuttur. Bu olgu sunumunda kliniğimize karın ağrısı ve kilo kaybı şikayeti ile gelen ve izole dalak metastazı saptanmasi sonucunda küçük hücreli dışı akciğer kanseri tanısı konulan 74 yaşındaki erkek hasta bildirilmektedir.

Anahtar Kelimeler: İzole dalak metastazı, Küçük hücreli dışı akciğer kanseri

INTRODUCTION

Splenic metastasis is relatively uncommon, is generally associated with disseminated disease and is often seen in breast cancer, lung cancer and melanoma.[1,2] It is usually diagnosed at the time of autopsy and is associated with other intraabdominal metastasis.[3] The incidence of solitary splenic metastasis is even rarer and data in the literature is limited to case reports.[3,4,5] The spleen has traditionally been viewed as "poor soil" for tumor deposits, likely because of its population of immune cells and hemodynamic characteristics.[6,7] While metastasis usually presents with vague symptoms, splenic rupture can complicate the course of some clinical cases.[4,8] Solitary metastasis to the spleen can be treated with splenectomy if the primary tumor has favorable features and in the absence of dissemination.[8,9] Treatment is aimed at palliation of symptoms if the primary tumor itself is unresectable, or in the presence of disseminated disease.[5]

CASE REPORT

A 74 year old man presented to the hospital with constipation, fatigue, mild abdominal pain and 20kg weight loss over three months. He has no pertinent past medical history. He was an ex-smoker who quit in 2004 after smoking 1 pack per day for

40 years. Physical examination revealed reduced air entry in the right upper and mid zones. Abdominal examination was unremarkable. During the initial work up in the emergency department, computed tomography (CT) scan of the abdomen showed a 5 x 5.6 cm splenic mass suggestive of metastasis (Figure 1). Chest radiograph revealed abnormal right upper lobe infiltrates with an enlarged right

hilum, suggestive of neoplastic disease. Contrast enhanced CT scan of the chest showed a right hilar soft tissue mass measuring up to 4.4 cm in AP diameter with marked narrowing of the right upper lobe bronchus (Figure 2). The mass also encased and appeared to occlude the right upper lobe (RUL) pulmonary artery. Right supraclavicular, superior mediastinal, paratracheal and subcarinal lymph nodes were grossly enlarged. A fiberoptic bronchoscopy was performed and showed that the RUL bronchus was completely obstructed. Bronchoscopic biopsy was consistent with invasive, high grade non small cell carcinoma. Carinal lymph node biopsy was positive for carcinoma. A routine metastatic workup revealed normal liver and adrenals, with no bone or brain metastases. His final clinicoradiologic staging was T2N3M1 non small cell lung cancer. The patient was treated with concurrent chemoradiotherapy with cisplatin and etoposide.

The primary tumor was unresectable so splenectomy and tissue diagnosis from the splenic lesion were not attempted. Treatment was ceased on week four and the patient was placed in hospice upon his request. Patient died of pneumonia followed by sepsis on week 10 while he was receiving palliative care. An autopsy performed after appropriate consent was obtained from patient's health care proxy. Autopsy revealed a spleen weighted 323 g and contained necrotic areas up to 6 cm diameter.

Histological examination confirmed metastatic adenocarcinoma with the same histological features as the primary tumor.

DISCUSSION

Metastatic disease involving the spleen is uncommon and isolated metastasis is extremely rare.[3,4] Splenic involvement in solid tumors mostly occurs in patients with widely disseminated metastatic disease.[10] In autopsy series the reported rate of spleen metastases varies widely from 0.6% to 17%.[10,11] A large series, including 4,404 autopsies of patients with carcinomas, disclosed a total of 312 (7.1%) splenic metastases.[12] In a more recent study by Schon, metastasis to the spleen was reported in 3.0% of 1895 autopsies. In that study lung cancer, malignant melanoma and breast cancer were the most frequent primary tumors, accounting for 24.6%, 15.8%, and 12.3% of all spleen metastases, respectively.[2] The other tumors which metastasize to spleen are female genital tract, stomach, prostate, ovarian and colon cancers.[13-18]

Except for metastasis differential diagnosis of splenic masses include, hemangioma, hamartoma, inflammatory pesudotumor, non-Hodgkin's lymphoma and Hodgkin's disease, granulomatous diseases involving the spleen, such as sarcoidosis, tuberculosis and histoplasmosis.[19-23] Primary nonhematopoetic tumors of the spleen may arise from the connective tissue (spindle cell sarcoma and fibrosarcoma) or sinus epithelium (hemangioendothelioma

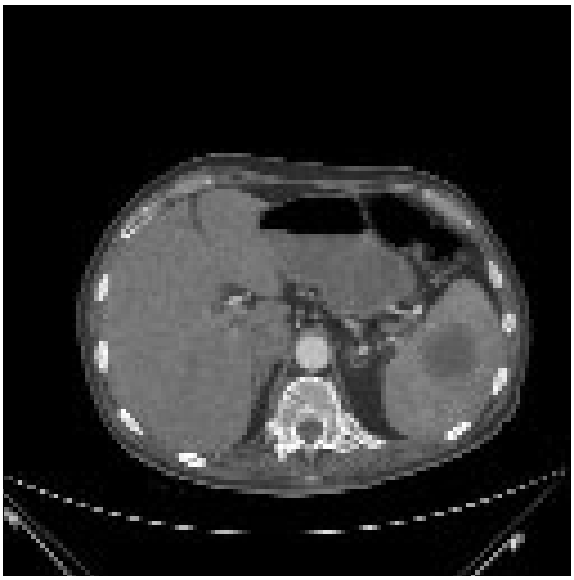

Figure 1. CT scan of the abdomen showing a 5 x 5.6 cm splenic mass

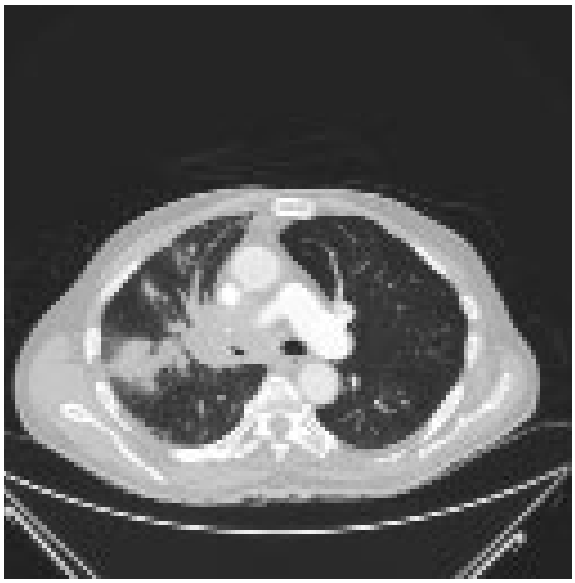

Figure 2. CT scan of the chest showing the right upper lobe mass

and angiosarcomas) and they are extremely rare.[24,25]

PET/CT can reliably distinguish between benign and malignant solid splenic masses.[26] The absence of PET/CT in the initial diagnostic work-up due to patient's preference limited our efforts to confirm that the lesion was malignant. Subsequently, an autopsy confirmed our diagnosis. In lung cancer, the probability of spleen metastasis was reported to range between 1.2% and 5.6%.[3,27] However, isolated splenic involvement of lung cancer is extremely rare and is restricted to anecdotal case reports in medical literature.[5,8,9] Various hypotheses have been generated to explain the presumed low relative frequency of spleen metastasis. These include quite mechanistic approaches including hemodynamic factors of the splenic blood supply, the physical barrier effect of the splenic capsule, the spleen's rhythmic contractility, and the sharp curl of the splenic artery complicating the constitution of tumor embolism.[11] Lack of afferent lymphatics and antitumor activity in relation with the dense lymphoid tissue concentration was reported to decrease the possibility of tumor metastases to the spleen.[7] The production of angiogenesis- inhibiting factors is another explanation for the rarity of splenic metastases.[6] Splenic metastases usually appear in older ages, generally in the seventh decade of life.[11] Patients are usually asymptomatic or have nonspecific symptoms such as vague abdominal pain and fatigue.[1] This is similar with our patient whose initial presentation was mild abdominal pain, constipation and weight loss. Although, in some cases patients may be symptomatic and the clinical course may even be complicated with splenic rupture.[4] Management has to be individualized and splenectomy should be offered to patients with otherwise favorable primary tumor features and an absence of dissemination.[5] The aim of splenectomy in isolated solitary splenic metastases from lung cancer is to protect other organs from metastases, as well as protecting from complications such as pain, splenic rupture and splenic vein thrombosis, which can occur due to splenomegaly; thus improvement in survival could be expected.[29] Several case reports document the survival of four lung cancer patients with isolated splenic metastases ranging from 1 to 49 months post-splenectomy.[3,11,28,29]

However, like our case, in patients where the primary tumor is itself unresectable or in the presence of disseminated disease, treatment is aimed at palliation of symptoms.[5] The important point is that, in patients who are otherwise being considered for curative treatment for the primary malignancy, the presence of a splenic lesion should alert the physician to the possibility of metastasis and the final treatment plan should take this into account.[8]

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Correspondence

Mehmet Hepgur, MD

Erie County Medical Center

Department of Medicine

462 Grider Street Buffalo

NY 14215 USA

Phone: +1 (716) 352 8707

Fax: +1 (716) 634 1065

e-mail: mfhepgur@buffalo.edu