

Cavitary Pulmonary Metastases of Gallbladder Cancer: A Rare Case Report

Safra Kesesi Kanserinin Kaviter Akciğer Metastazı: Nadir Bir Olgu Sunumu

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Abstract

A gallbladder carcinoma is extremely fatal malignant tumor. The occurrence of excavated lung metastases is rarely observed only in 4% of cases. Herein, we describe a case of cavitary pulmonary metastases of gallbladder cancer. A 69 year-old woman was admitted to our hospital for routine controls. Three years before, she underwent partial hepatectomy with enbloc resection of the gallbladder and dissection of regional lymph nodes. The patient was event-free during follow-up. At 32 months, thoracic CT revealed a cavitary lesion in the right lung. Metastasectomy and mediastinal lymph node dissection was performed. Patient was discharged on day 14 after surgery without any complications. To the best of our knowledge, a relatively small number of cases with metastatic lung tumors cavitation have been reported in the literature. The differential diagnosis should be made with caution in patients with a history of neoplastic disease. Early diagnosis and treatment increase survival.

Key words: Gallbladder, adenocarcinoma, cavitation, lung metastases.

Özet

Safra kesesi kanseri son derece ölümcül malign bir tümördür. Kaviter akciğer metastazları çok nadir ve olguların sadece % 4'ünde görülür. Burada, safra kesesi kanserinin neden olduğu kaviter akciğer metastazı olgusunu sunmayı amaçladık. Altmış dokuz yaşında bayan hasta olağan kontrolleri için hastanemize başvurdu. Üç yıl önce, safra kesesi kanseri nedeniyle enblok safra kesesi ve parsiyel karaciğer rezeksiyonu ile bölgesel lenf nodu diseksiyonu yapılmış. Buna bağlı olarak 32 ay boyunca yapılan takipleri, son toraks bilgisayarlı tomografisinde sağ akciğerde kaviter lezyon ortaya çıkana kadar negatifti. Metastazektomi ve mediastinal lenf nodu diseksiyonu yapıldı. Hasta komplikasyonsuz olarak ameliyat sonrası 14. günde taburcu edildi. Görece az sayıda kaviter metastatik akciğer kanseri bildirilmiştir. Ayırıcı tanı neoplastik hastalık öyküsü olan hastalarda dikkatle yapılmalıdır. Erken tanı ve tedaviyle sağ kalımın artacağına inanıyoruz.

Anahtar Sözcükler: Safra kesesi, adenokarsinom, kavitasyon, akciğer metastaz.

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Submitted (Başvuru tarihi): 22.12.2015 **Accepted (Kabul tarihi):** 20.01.2016

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Although gallbladder carcinomas (GBCs) which are treated by surgical resection with curative intent, show variations all over the world depending on geographic and ethnic differences, they have a poor prognosis (1). These tumors are the sixth most common malignancies among gastrointestinal cancers. A carcinoma of the gallbladder was first identified by Stoll in 1877 during an autopsy procedure. Although rare, it has a poor prognosis due to its anatomic position and non-specific symptoms (1-3). It is three times more common in women, and occurs in patients 65 years and older. Three out of four cases are accompanied with cholelithiasis. One-year survival rate of a GBC is about 10% (4,5). While curative treatment can be achieved with resection in patients with early disease, 90% of patients with advanced disease fail to achieve cure. Half of patients with a GBC also have lymph node and liver involvement with a shorter survival rate in months (6,7). Although cavitation in primary lung cancer is common, cavitary lesions are usually rare in pulmonary metastases (8). In our case, we detected a cavitary pulmonary metastasis of the gallbladder and, performed surgery. This case was presented due to its rarity in the literature.

CASE

A 59-year-old female patient presented to the general surgery outpatient clinic with complaints of abdominal pain and nausea six months ago. She underwent cholecystectomy including hepatic segments 4 and 5. She received postoperative chemotherapy and radiotherapy. A follow-up computed tomography (CT) of the thorax showed two nodules, the larger one measuring 5.5 mm in diameter laterally- and peripherally-located in the posterior segment of the right upper lobe of the lung, and a cavitary lesion of 20x18 mm in size with a thick, but regular wall in the superior segment of the right lower lobe of the lung (Figure 1 and 2). Based on these findings, the patient underwent positron emission (PET) CT which revealed a slightly increased FDG uptake (SUVmax: 3.54) in a cavitary lesion of 18x20 mm with a thick wall in the superior segment of the right lower lobe of the lung, and slightly increased FDG uptakes (SUVmax: 3.40) in lymph nodes reaching to 1 cm in diameter in the paratracheal, precarinal, and bilateral hilar regions of the mediastinum (Figure 3). No FDG affinity or associated pathological uptake was observed at the resolution limit in the nodule, measuring 6 mm in diameter in the posterior segment of the right upper lobe of the lung. Diagnostic fiberoptic bronchoscopy was made and reported as normal. The

patient was scheduled for diagnostic thoracotomy. The cavitary lesion and nodule in the right upper lobe were removed by the wedge resection during surgery. The removed nodule and cavitary lesion were sent for frozen section. The frozen section report indicated that both lesions were malignant. The Department of Pathology suggested immunostaining to determine if the lesion was a metastasis of a primary lung cancer or gallbladder cancer (Figure 4). Therefore, the patient was scheduled for metastasectomy, and, then, mediastinal lymph node dissection was performed. Lymph nodes 4a, 4b, 10, 11a, 11b, and 12 were removed and sent to pathology lab. As her overall condition improved, the patient was discharged on day 14 after surgery.

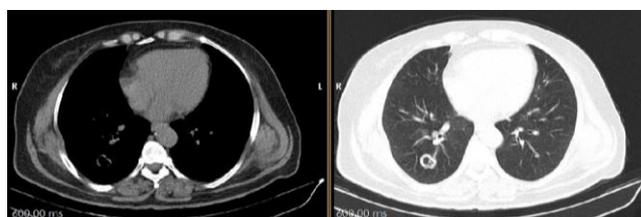


Figure 1: Thoracic CT scan revealed cavity in right hemithorax

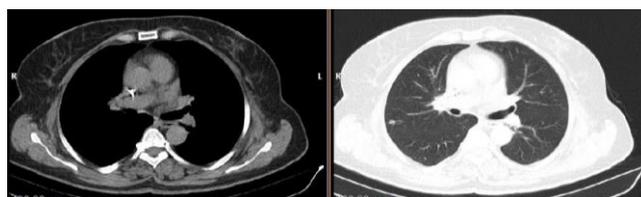


Figure 2: Thoracic CT scan showing nodule in right hemithorax

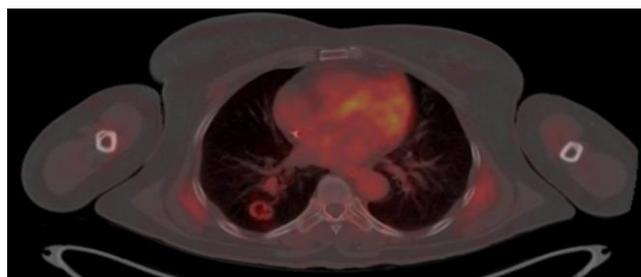


Figure 3: PET-CT showing metastatic cavitary lesion in right hemithorax

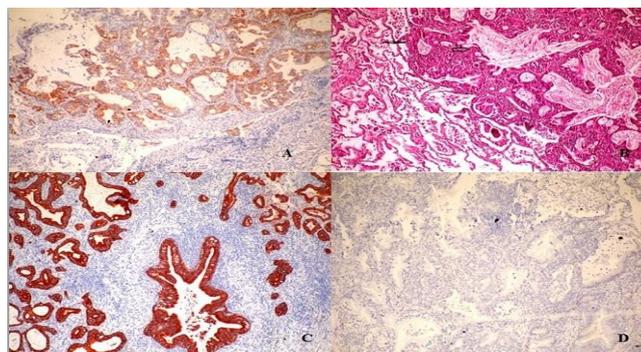


Figure 4a, b, c and d: CK7 immunoreactivity in tumor cells (A), metastatic tumor tissue (thick arrow) (B) (H&E), CA immunoreactivity in tumor cells (C), TTF 1 immunoreactivity-negative in tumor cells (D) (X 200)

DISCUSSION

A cavity has been defined in the radiology literature as “a gas-filled space within a zone of pulmonary consolidation or within a mass or nodule, produced by the expulsion of a necrotic part of the lesion via the bronchial tree” (pathologically) and “a lucency within a zone of pulmonary consolidation, a mass, or a nodule; hence, a lucent area within the lung that may or may not contain a fluid level and that is surrounded by a wall, usually of varied thickness” (radiographically). A cavity is the result of any of a number of pathological processes. One of them is malignant process such as lung metastasis (9). Lung represents a major metastatic site of the body, as there is a seat about 30 to 50% of all secondary locations. Cavitary lung metastases are rarely observed only in 4% of cases (10). Typically GBC occurs in older ages, and usually complicated with other diseases of the gallbladder, which may lead to misdiagnosis. In addition, GBCs are more common in women, while bile duct carcinomas are more common in men. Also, GBCs are histopathologically classified in four subgroups: adenocarcinoma (papillary, tubular, mucinous, etc.), squamous and adenosquamous-cell carcinoma, undifferentiated carcinoma, and rare tumors (small-cell carcinoma, sarcoma, melanoma and lymphoma). The most common type is adenocarcinoma with a rate of 80 to 95%. Eighty percent of patients have also infiltration to the adjacent liver, while 50% are infiltrated to the portal vein, choledoc and other organs (colon, duodenum and jejunum). The five-year survival rate is very low in non-surgical patients, while it is 20% after resection (8). In gallbladder cancer, the most common site of extra-abdominal metastases is the lung. Cavitary lung metastasis was first described by Bristowe in 1871 (9). The most common malignancies leading to cavitary lung metastases include primary squamous-cell carcinoma of the larynx and carcinoma of the pharynx, tongue, cervix and skin (10,11). Extra-abdominal metastases of gallbladder cancers are 55% localized in the lungs (12,13). While a systemic metastasis usually indicates that primary tumor is uncontrollable with a poor prognosis, isolated lung metastasis does not necessarily mean that the disease is always systemic and uncontrolled (14). Patients with an isolated pulmonary metastasis have a much better response to local and systemic treatment, compared to those with multi-organ metastases, and they must be evaluated distinctly based on this feature (15). A complete resection of pulmonary metastases may result in a mean five-year survival of 20 to 50% (16,17). It is usually very likely to detect metastases by routine chest X-rays

after treatment of the primary tumor. They usually appear with regular margins, sometimes in the form of multiple opacities. Patient with a confirmed or suspected metastasis in chest X-ray should also be evaluated by computed tomography (CT) before surgery. Lymph nodes 3 mm in size can be seen as nodules on CT. Abecasis et al. (18) reported that the lesion was undetectable in plain radiographs in 20% of patients whose metastases were confirmed by CT.

There are relatively few case reports on cavitation in metastatic pulmonary tumors in the literature. Although metastatic pulmonary nodules are rare, a careful differential diagnosis should be performed in patients with a neoplastic disease. We believe that survival will improve by treatment of metastatic lesions which are confirmed by early biopsy procedure and resection.

CONFLICTS OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Concept - M.Ç., S.G.Ç., T.T.B., Y.Ü., H.E.; Planning and Design - M.Ç., S.G.Ç., T.T.B., Y.Ü., H.E.; Supervision - M.Ç., S.G.Ç., T.T.B., Y.Ü., H.E.; Funding - M.Ç., S.G.Ç.; Materials - M.Ç., S.G.Ç.; Data Collection and/or Processing - M.Ç., S.G.Ç.; Analysis and/or Interpretation - M.Ç., S.G.Ç.; Literature Review - M.Ç., S.G.Ç.; Writing - M.Ç., S.G.Ç.; Critical Review - M.Ç., S.G.Ç.

YAZAR KATKILARI

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