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Hepatic Macronodular Tuberculoma Mimics Liver Metastasis in a Patient With Locoregional Advanced Tongue Cancer

Case Report

A 55-year-old man had disseminated tuberculosis involving the lungs and right foot, with initial presentation of complicated right foot cellulitis. He had undergone antituberculosis treatment with combined use of pyrazinamide, rifampin, ethambutol, and isoniazid in April 2005. Other than the persistent abnormal appearance of plain chest radiographs, there were no clinical events thereafter. However, in September 2010, the patient presented with gradual dysphagia and odynophagia. On physical examination, an enlarged and indurated mass was noted on the left hemitongue. Several enlarged, painless, and fixed lymph nodes were palpable on the left upper neck region. Laboratory studies revealed normal blood counts, liver function tests, renal function, and inflammatory biomarkers. Incisional biopsy of the tongue mass confirmed the diagnosis of squamous cell carcinoma (SCC). Contrast-enhanced computed tomography (CT) of the head/neck, chest, and upper abdomen for pretreatment evaluation revealed locally advanced tongue cancer (Fig 1A; arrow) and lymph node metastases in the left upper neck (Fig 1B; arrowhead). In addition, patchy consolidation with cystic, calcified, and fibronodular change was noted in the left lung (Fig 1C), compatible with pulmonary tuberculosis also confirmed by the subsequent polymerase chain reaction assay for *Mycobacterium tuberculosis* complex from the patient's sputum. Nevertheless, a hypodense nodule with minimal enhancement, measuring 16 × 12 mm, was found in segment four of the liver (Figs 2A, 2B; arrows).

For further differentiation of the hepatic lesion and whole-body survey of the tongue cancer, fluorodeoxyglucose (FDG) positron emission tomography (PET)/CT was performed, revealing hypermetabolic lesions suggestive of malignancy in the left tongue (Fig 2C; maximum standardized uptake value [SUVmax], 13.2) and bilateral upper neck regions (Fig 2C; SUVmax, 3.2). Moreover, it also showed heterogeneous intense radioactivity (SUVmax, 2.8) in the left upper lung region (Fig 2C), compatible with an active inflammatory process such as pulmonary tuberculosis. Nevertheless, abnormal FDG uptake (SUVmax, 3.0) was also found in segment four of the liver (Figs 2C to 2E; arrowheads). Although the character of FDG uptake in the hepatic lesion might have been attributable to malignancy, an inflammatory process such as tuberculosis was also possible, because the lungs revealed probable active inflammation as with pulmonary tuberculosis. However, whether hepatic tuberculoma or hepatic metastasis from locoregional advanced tongue cancer, it was an unusual clinical manifestation. To determine a treatment strategy, it was necessary to obtain pathologic confirmation of the hepatic lesion.

Histologic examination of the hepatic nodule via CT-guided biopsy revealed caseating granulomatous inflammation characteristic of hepatic tuberculoma (Fig 3; hematoxylin and eosin stain, ×200). As a result, this patient then underwent surgery for the tongue cancer and neck lymph node metastases, with the resulting pathologic stage of T4aN2cM0, stage IVA. Adjuvant chemoradiotherapy was initiated postoperatively.

Discussion

The incidence of distant metastases in patients with head and neck SCC (HNSCC) is relatively low in comparison with other malignancies.[1] Approximately 15% to 30% of patients with HNSCC present with early-stage disease, and 60% to 80% present with locoregional advanced disease.[2,3] Distant metastasis at the time of presentation is less common, accounting for 2% to 17% of patients.[1,4] In postmortem studies, the overall prevalence of distant metastases in patients with HNSCC is higher and reported to be 10% to 60%.[5] Once distant metastases occur, prognosis is poor. Median time to death from diagnosis of distant metastases ranges from 1 to 12 months.[6]

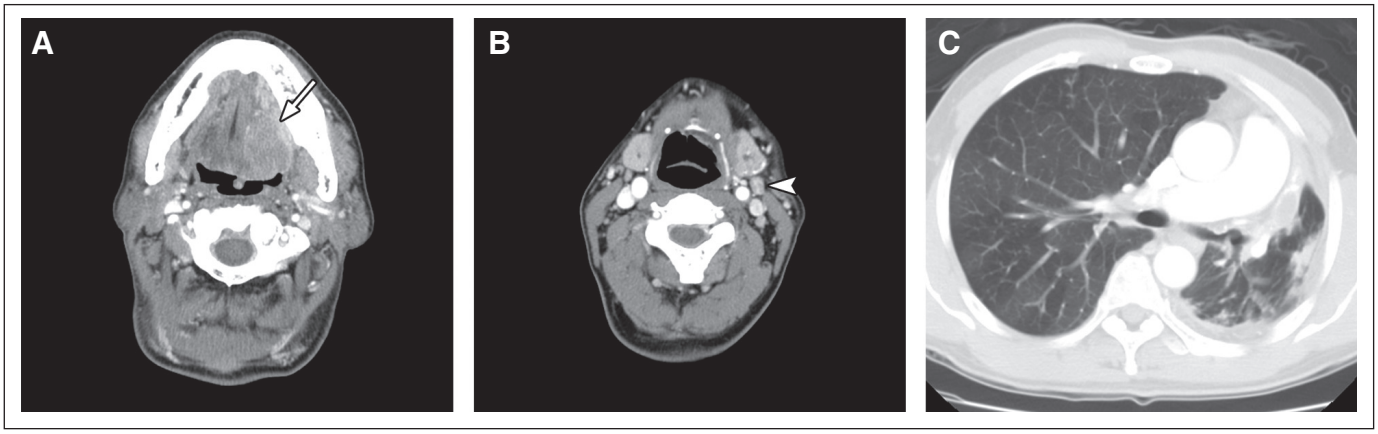

Fig 1.

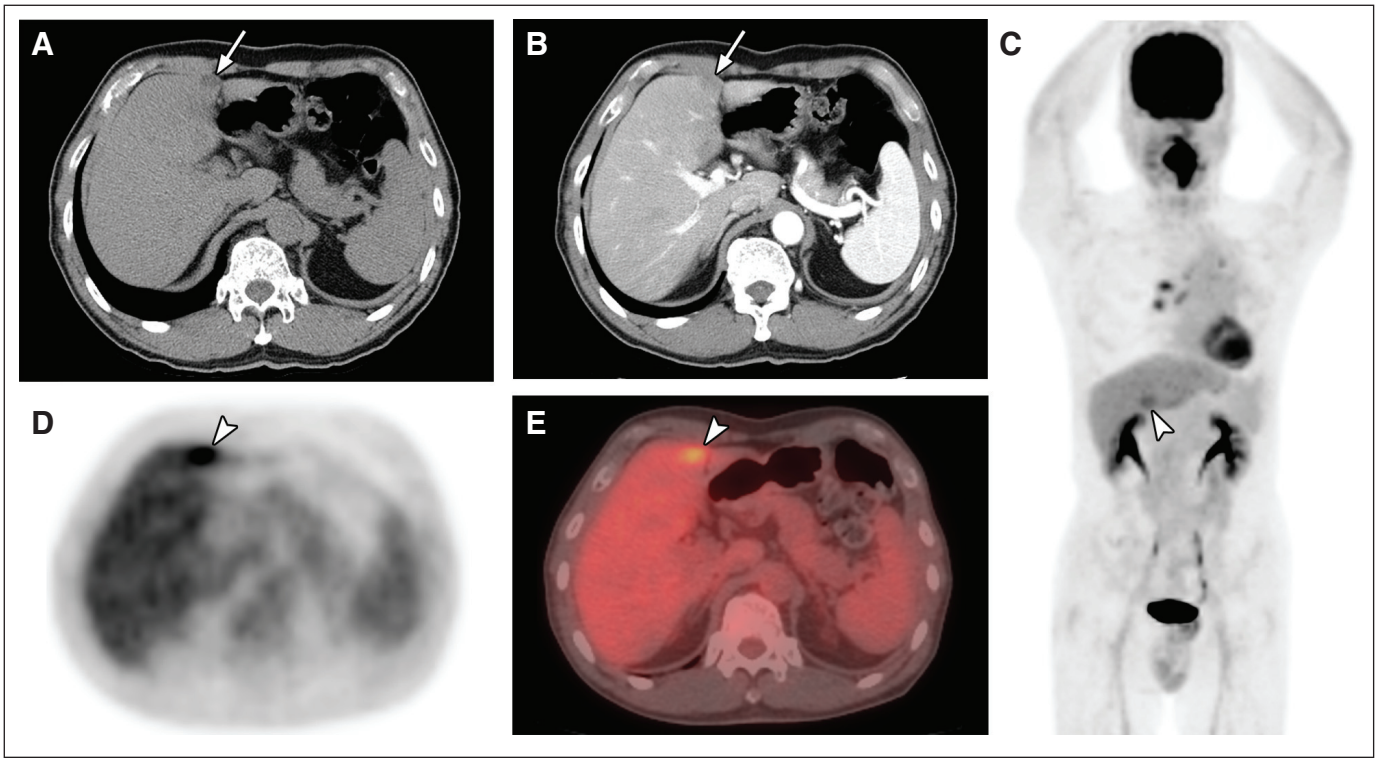

Fig 2.

The stage of the tumor, especially the presence and extension of lymph node metastases, greatly influences the incidence of distant metastases.[1] The presence of lymph node metastases increases the risk of developing distant metastases. A greater incidence of distant metastases is noted especially in patients with multiple or low jugular lymph node metastases.[4] The lungs (45% to 83%), bone (10% to 41%), and liver (6% to 24%) are the most common sites of distant metastases from HNSCC.[5,7] Therapy for patients with HNSCC and distant metastases is aimed at palliation, because cure rates at such an advanced stage are extremely low.[2,8]

On the other hand, hepatic tuberculosis is rare and constitutes less than 1% of all patient cases of tuberculosis.[9,10] Hepatic tuberculosis has been classified by Levine[11] as miliary tuberculosis, pulmonary tuberculosis with hepatic involvement, primary liver tuberculosis, focal tuberculoma or abscess, or tuberculous cholangitis. Hepatic involvement as a part of miliary or pulmonary tuberculosis accounts for nearly 70% of patients,[10] and with hepatic tuberculosis, the initial lesion in the liver is a granulomatous tubercle, with or without caseating necrosis, which may become fibrotic and calcified during healing.[12] Rarely, coalescent granulomas may form tuberculomas.[9] If the size of the hepatic nodules is greater than 2 mm, they are generally diagnosed as macronodular hepatic tuberculosis.[13,14] Imaging studies for hepatic tuberculosis are nonspecific and usually regarded as primary or metastatic carcinoma.[15,16] Diagnosis often requires pathologic confirmation via biopsy.[17] Histologically, the presence of a caseating granuloma is diagnostic for hepatic tuberculosis.[18] Other diagnostic tests have low sensitivity, including acid-fast staining (0% to 45%), culture (10% to 60%), and even polymerase chain reaction (57%).[11,19,20] Quadruple therapy (isoniazid, rifampin, pyrazinamide, and ethambutol) is recommended because of the increasing incidence of drug-resistant tuberculosis. At least 1 year of medical therapy is generally required.[10] With early diagnosis and prompt effective treatment, the prognosis of hepatic tuberculosis is usually good.[17] On the contrary, untreated abdominal tuberculosis carries a 50% mortality rate.[21]

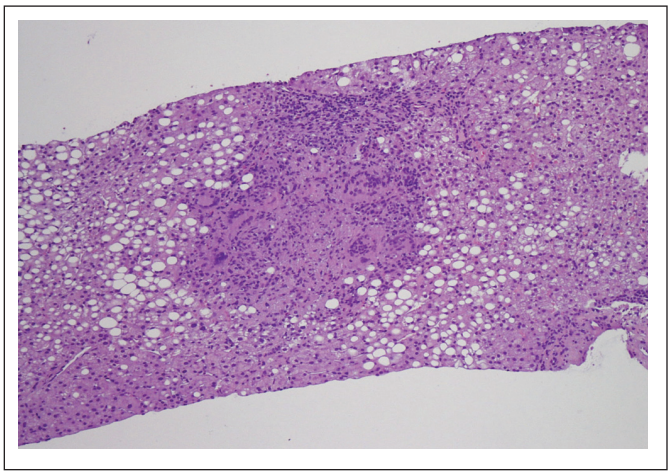

Fig 3.

The current patient case revealed an uncommon condition involving distinguishing two rare etiologies of a hepatic lesion in locoregional advanced tongue cancer and pulmonary tuberculosis. Moreover, correct diagnosis was so important for this patient because both etiologies, if treated erroneously, might have caused unnecessary morbidity and even seriously accelerated mortality. In this case, both CT and FDG PET detected the hepatic lesion. In the absence of

documented concurrent infection in the lungs, the patient may have been misdiagnosed with distant metastatic involvement of the liver and treated in a palliative fashion. As mentioned earlier, liver tuberculosis, although rare, has been sporadically reported with or without pulmonary or miliary tuberculosis and is usually misrecognized as a primary or metastatic hepatic tumor. The diagnosis of hepatic tuberculosis usually depends on pathologic confirmation. Therefore, once a patient with HNSCC presents with hepatic nodules, hepatic tuberculosis should be considered in the differential diagnosis, and pathologic confirmation may be necessary to direct subsequent appropriate treatment.

Te-Chun Hsieh and Yu-Chin Wu
China Medical University Hospital; and China Medical University, Taichung, Taiwan

Cheng-Nan Hsu, Chun-Fan Yang, I-Ping Chiang, and Ching-Yun Hsieh
China Medical University Hospital, Taichung, Taiwan

Shung-Shung Sun and Chia-Hung Kao
China Medical University Hospital; and China Medical University, Taichung, Taiwan

AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

The author(s) indicated no potential conflicts of interest.

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