“St. Peregrine tumor” with synchronous primary renal cell carcinoma

Sir,

We present a very rare case of squamous cell lung cancer having spontaneous regression (St. Peregrine tumor) with a synchronous primary renal cancer.

A 74-year-old male, chronic smoker with smoking index of more than 20 pack year, Stage III chronic obstructive pulmonary disease, presented with worsening exertional dyspnea and productive cough of 2-month duration. His chest radiograph showed a right parahilar opacity [Figure 1a]. The high-resolution computed tomography (CT) of chest showed a solid lesion in the right upper lobe with spiculated margin, internal hypoenhancing area, and positive bronchus sign [Figure 1b]. An incidental note was also made of a heterogeneously enhancing lesion in the mid pole of the right kidney. The sputum examination was negative for acid-fast bacilli, pyogenic culture, and GeneXpert. A fiberoptic bronchoscopy with transbronchial lung biopsy (TBLB) was performed. The TBLB was inconclusive. A CT-guided lung biopsy was performed. The chest radiograph and CT scan performed at the time of CT-guided biopsy showed that the lesion had significantly increased in size [Figure 1c and d]. It showed mixed inflammatory infiltrate, pigmented macrophages, and dense bronchoalveolar and interstitial fibrosis. The immunohistochemistry of the specimen was positive for CD8+ cells and natural killer cell, but there was no evidence of pyogenic infection or tuberculosis. A repeat biopsy was planned. However, the patient was lost to follow-up and reported back after 1 month. The chest radiograph and CT scan showed that the lesion
“tumor” – with “synchronous primary” clear-cell carcinoma right kidney.

Everson and Cole defined spontaneous regression (SR) as the partial or complete disappearance of a malignant tumor. Kumar et al. presented “modified Everson and Cole criterion” which defines SR as: (1) the partial or complete disappearance of the tumor in the absence of all systemic or local treatment of the primary or metastatic lesion, (2) the patient has not received any systemic therapy (chemotherapy, radio-ablative techniques, and chemoembolization), and (3) primary malignancy is histologically diagnosed or the lesion appears malignant.

Table 1: Various case reports of spontaneous regression of squamous cell carcinoma lung

| Authors            | Histologic type | Smoking status | TNM stage | Involvement of other organ | Possible cause of SR                                      | Year of publication | Place of study |
|--------------------|-----------------|----------------|-----------|----------------------------|----------------------------------------------------------|---------------------|---------------|
| Sperduto et al.    | Squamous cell   | Yes            | T1N2M1    | Adrenals                   | Not specified                                            | 1988                | England       |
| Liang et al.       | Squamous cell   | N/A            | T2N2M0    | None                       | Herbs                                                   | 2004                | China         |
| Pujol et al.       | Squamous cell   | Yes            | T2N3M0    | Brain                      | Anti Hu Ab                                              | 2007                | France        |
| Gladwish et al.    | Squamous cell   | Yes            | T1N0M0    | None                       | Herbal remedy Essiac                                     | 2010                | Canada        |
| Furukawa et al.    | Squamous cell   | Yes            | T2N3M1    | Adrenals                   | Immune system alteration secondary to infection (TB)     | 2011                | Japan         |
| Choi et al.        | Squamous cell   | Yes            | T1N2M1    | Adrenals                   | Not specified                                            | 2013                | South Korea   |
| Park et al.        | Squamous cell   | N/A            | T4N2M1    | Breast metastasis          | Korean ginseng                                           | 2016                | South Korea   |
| Esplin et al.      | Squamous cell   | Yes            | T1N0M0    | None                       | Not specified                                            | 2018                | USA           |
| Ariza-Prota et al. | Squamous cell   | Yes            | T3N3M1    | Skin                       | Not specified                                            | 2018                | Spain         |

N/A: Not available, TB: Tuberculosis, SR: Spontaneous regression, TNM: Tumor-nodes-metastasis

became cystic [Figure 1e and f]. Hence, ultrasound-guided needle aspiration from the right kidney was done, which came positive for malignant cells. The patient underwent nephrectomy. Histopathological examination of the kidney mass revealed clear-cell carcinoma. The follow-up chest radiograph and CT after nephrectomy [Figure 1g and h] showed increase in size again. CT-guided lung biopsy now showed squamous cell carcinoma of lung, positive for P63 and P40 and negative for transcription termination factor 1. The first lung biopsy, immunohistochemistry, kidney biopsy, and second lung biopsy are shown in Figure 2a-d. The final diagnosis made was – spontaneously regressing squamous cell carcinoma lung – “St. Peregrine tumor” – with “synchronous primary” clear-cell carcinoma right kidney.
Case Letters

The first histopathology sample which showed infiltration of lung parenchyma by inflammatory cells. (b) x40 view of immunohistochemistry of first biopsy positive for CD8 cells. (c) x40 view of histopathology of kidney mass showing clear cell carcinoma. (d) x40 view of histopathology of second biopsy from lung mass with hematoxylin and eosin staining showing squamous cell carcinoma.

Figure 2: (a) The first histopathology sample which showed infiltration of lung parenchyma by inflammatory cells. (b) x40 view of immunohistochemistry of first biopsy positive for CD8 cells. (c) x40 view of histopathology of kidney mass showing clear cell carcinoma. (d) x40 view of histopathology of second biopsy from lung mass with hematoxylin and eosin staining showing squamous cell carcinoma.

radiographically or clinically. This phenomenon of SR is known for several hundred years and is also termed as St. Peregrine tumor. In our patient, the lesion had almost completely disappeared, he did not receive any specific treatment, the lesion appeared malignant radiologically, and it was proven malignant subsequently. Since he satisfied all the criteria, he was diagnosed to have “St. Peregrine tumor.”

The incidence of SR is reported to be 1 in 60,000–100,000. Kumar et al. reported only two cases of SR due to primary lung cancers from 71 cases between 1951 and 2008. We could find only nine cases of squamous cell carcinoma having SR in MeSH database of PubMed. In majority of the reported cases, the possible cause of SR was not known [Table 1].

The possible mechanisms that are associated with SR are apoptosis, immune mediated, microenvironment changes, and DNA oncogenic suppression. Coley had proposed a role of infection in regression of tumors. Studies conducted by Scheider et al. and Iwakami et al. showed regulatory T-cells and CD8-positive lymphocytes, respectively, in lung malignancies with SR. The biopsy specimen of our patient showed CD8+ cells and natural killer cell, suggesting that T-cell-mediated reaction around the tumor leads to regression. The immunological reaction leading to SR in our case was possibly due to synchronous primary because lung cancer regressed in the presence of renal cancer and the removal of renal cancer led to reappearance of lung cancer. The presence of two malignancies in our patient, i.e., multiple primary malignancies, were synchronous primary tumors because they were diagnosed within a 6-month interval.

To conclude, there have been case reports of synchronous primary lung and renal cancer, but squamous cell carcinoma of lung and clear cell carcinoma of kidney have not been reported so far. The synchronous primary possibly led to immunological regression of lung cancer.

Declaration of patient consent
The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest
There are no conflicts of interest.

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Sir, 

A 65-year-old male patient presented in the cardiology department with complaints of chest pain and breathlessness on exertion for 6 months. In view of angina-like symptoms, the patient underwent coronary angiography, which revealed triple-vessel disease. An additional radiopaque mobile round mass was noted overlapping the cardiac shadow, which was suspected to be located inside the cardiac chamber [Figure 1]. The radiopaque mass seemed to be located in the right ventricle (RV) and seen oscillating between RV cavity and RV outflow tract. Subsequently, echocardiography was done which did not reveal any intracardiac mass, and for further evaluation, contrast-enhanced computed tomography (CT) chest was performed on 64-slice multidetector CT scanner which did not reveal any intracardiac mass lesion; however, it showed the presence of focal dense calcification along the posterior pleura of lower lobes of both lung, which moves to the dependent position in the right decubitus CT scan, suggestive of wandering calcification in the pleural cavity [Figure 2]. Volume-rendered images of the chest showed well-circumscribed densities along posterior chest wall opposite eighth to ninth intercostal space [Figure 3]. In addition, it also showed triple-vessel coronary artery disease and bilateral pleural effusion.

Pleural mouse or thoracolithiasis is an uncommon, benign condition characterized by the formation of one or multiple calcified or noncalcified lesions within the pleural space; its reported incidence was found to be around 0.9% in a large study done by Kinoshita et al. in 2010. However, their exact prevalence is not known because in majority of cases, they were mistaken as peripherally located calcified granuloma. It is also known by names of fibrin body, pleural stone, plurollith, and intrathoracic calculus. Only few case reports and case series are available in the literature. The exact etiology behind their existence is not known, but prevalent theories suggest their origin from necrosis of mediastinal or pericardial fat; histologically they often consist of fibrous shell with fatty core. Calcification may or may not be present. Our case presented densely calcified loose bodies. These lesions are very rarely symptomatic, with majority of cases being detected incidentally on CT scan or other imaging modality. No age or sex predilection has been reported.