

Squamous Cell Lung Carcinoma Presenting with Erythema Annulare Centrifugum

Erythema annulare centrifugum (EAC) is a permanent or migrating eruption characterized by annular, arcuate, or polycyclic erythematous lesions that expand to the periphery when the medial parts fade. Darier was the first to describe it in 1916 (1,2). Defining the incidence and prevalence of EAC is difficult because the literature mostly consists of case reports and brief reviews. Although its etiology is not known for certain, it is assumed to be a hypersensitivity reaction to malignancies, infections, and drugs. However, there have not been any underlying factors detected in the majority of cases. The prognosis for EAC is excellent, except when associated with an underlying malignancy and other systemic disease (1-3). A diagnosis of EAC should be followed by diagnostic work-up because it may result in the discovery of an underlying disease.

We describe a 52-year-old man affected by EAC, who upon further examination was diagnosed with squamous cell carcinoma of the lung (SCCL).

A 52-year-old male patient was admitted to our department with itchy, erythematous, annular, polycyclic plaques, with a trailing scale present on the inner aspect of the advancing edges (Figs. 1 and 2). The plaques had been present on his trunk, extremities, and face for more than 3 months. The patient

reported that the itchy lesions had first appeared on his forearms, then spread to his trunk, lower extremities, and face in a few weeks. Skin punch biopsy revealed orthokeratotic, parakeratotic hyperkeratosis observed occasionally on the epidermis, and mild vascular proliferation and perivascular mononuclear cell infiltration on the papillary dermis. The deep dermis, subcutis, and epidermal appendages were normal. The patient was diagnosed as EAC based on histopathologic and clinical findings. There was no history of antecedent infections or recent initiation of a new drug. Routine blood count and other chemistry tests produced normal results. Chest x-ray showed changes in the paracardiac areas of the middle and lower zones of the left lung, nodular opacities with peripheral reticuloliner extensions, and tubular radiolucent areas compatible with bronchiectasis in this region (Fig. 3). Thoracic computed tomography scan revealed a thick-walled, cavitory lesion, 4.5 cm in diameter, centrally located in the suprahilar region of the upper lobe of the left lung, observed to have a subsidiary of the upper lobe bronchus, micronodules and branching linear opacities on the parenchyma, intra-interlobular irregular septal thickening, and tractional bronchiectasis with pleuroparenchymal density increments in peripheral areas (Fig. 4). In con-



Figures 1 and 2. Itchy, erythematous, annular, polycyclic plaques, with a trailing scale present on the inner aspect of the advancing edges.



Figure 3. Changes in the paracardiac areas of the middle and lower zones of the left lung, nodular opacities with peripheral reticuloliner extensions, and tubular radiolucent areas compatible with bronchiectasis.



Figure 4. A thick-walled, cavitary lesion centrally located in the suprahilar region of the upper lobe of the left lung, with a subsidiary of the upper lobe bronchus, micronodules and branching linear opacities on the parenchyma, intra-interlobular irregular septal thickening, and tractional bronchiectasis with pleuroparenchymal density increments in peripheral areas.

sultation with pulmonologist, the patient was diagnosed with lung cancer; laboratory findings: CA 15-3, 32.7 U/mL (reference range: 0-31.3); CEA 7.75 ng/mL (reference range: 0-3); and erythrocyte sedimentation rate 21 mm/h (reference range: 0-15).

The patient was hospitalized for treatment at department of pulmonary disease. Tumorous cells were

observed on histopathologic examination of the lung biopsy obtained during bronchoscopy, which stained positive for P63 and negative for CYT7-20, CEA, TTF1, and MUC31.

Clinical and histopathologic findings, and in consultation with a pulmonologist, indicated SCCL presented with superficial EAC. The patient was referred to thoracic surgery department for surgical treatment.

Erythema annulare centrifugum is among diseases of unknown etiology (4). Erythema giratum re-pens and EAC are figure erythemas associated with malignancy (5). A review of medical literature reveals that malignancies related to EAC are squamous cell carcinoma, nasopharyngeal carcinoma, acute myelocytic leukemia, peritoneal carcinomatosis, primary bronchial carcinoid, Hodgkin's lymphoma, chronic lymphocytic leukemia, multiple myeloma, prostate carcinoma, malignant histiocytosis, mucinous ovarian carcinoma, and breast cancer (3,4,6-9). Monsieur *et al.* report on EAC, pulmonary osteoarthropathy, palmoplantar hyperkeratosis, inappropriate secretion of antidiuretic hormone, ectopic secretion of adrenocorticotrophic hormone and calcitonin in poorly differentiated lung adenocarcinoma (10). Some other publications also report on a random relationship of EAC and malignancy (4). One study of 66 cases identified cutaneous fungal infection as the most important etiologic factor (72%), while other causes included benign internal neoplasm (13%), skin diseases (18%) and internal diseases (21%) (11). A study involving 73 EAC patients revealed neoplasia in 7% of deep type EAC cases (12).

Squamous cell carcinoma of the lung accounts for 25%-30% of all lung cancers. Most lung carcinomas are diagnosed at an advanced stage, conferring a poor prognosis. The need to diagnose lung cancer at an early and potentially curable stage is thus obvious. Approximately 7%-10% of patients with lung cancer are asymptomatic, and their cancers are diagnosed incidentally after a chest radiograph performed for other reasons. Paraneoplastic syndromes may be the first or most prominent manifestation. Most paraneoplastic syndromes are caused by small cell lung cancer (SCLC). However, many paraneoplastic syndromes also occur in non-small cell lung cancer (NSCLC) patients. The symptoms may be endocrine, neuromuscular, musculoskeletal, cardiovascular, cutaneous, hematologic, gastrointestinal, renal, or miscellaneous in nature. Cutaneous itching is the most frequent cutaneous manifestation in patients with cancer. Herpes zoster, ichthyosis, flushes, alopecia, acanthosis nigricans, dermic melanosis, or hypertrichosis may also

be observed. When a patient is diagnosed as a "typical" paraneoplastic syndrome, a diagnosis of cancer should be considered and investigated (13).

Although our patient did not have any symptoms of lung carcinoma, etiologic study of EAC revealed early stages of SCCL. To our knowledge, this is the first case of EAC presented with SCCL. Etiology oriented research performed in EAC patients will help in early diagnosis and treatment of malignancies. This report is presented to emphasize the importance of etiologic research of EAC and EAC association with SCCL.

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