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Case report

Pulmonary nodules and primary Sjögren syndrome: a case report

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Abstract. Primary Sjögren syndrome (pSS) is a systemic autoimmune disorder that principally affects the exocrine glands but can also affect systemic or extra-glandular sites. Approximately 65-80% of patients with Sjogren's demonstrate pulmonary involvement at the CT scan and pulmonary nodules (PNs) can be encountered as a common finding. We present the case of a 49-year-old woman admitted to the emergency department for chest pain and fever. The patient was diagnosed with pSS fourteen years prior and had never taken therapy or followed regular check-ups. At the HRTC were found PNs that were studied trough a CT-PET and a needle biopsy via CT guidance, which showed diffuse large B cell lymphoma. This case report underlies the importance of check-ups and the need for a multidisciplinary approach in the care of Sjögren's syndrome patients.

Key words: primary Sjögren syndrome, pulmonary nodules, lymphoma

Case report

A 49-years-old-female, non-smoker, with a family history of neoplastic diseases (her father had a lymphoma and her mother a uterine sarcoma) that was diagnosticated with pSS fourteen years prior and had never attended further medical checkups or took any therapy, complained of constricting pain in the retrosternal and in the left supramammary region, that was partially responsive to non-steroidal anti-inflammatory drug, as well as asthenia and low-grade fever (37.5 °C). Due to the persistency of the symptoms the patient went to the E.R., where at the physical examination no abnormalities were found and the routine blood tests didn't show any alterations except for high D-dimer levels (790 ng/dL). The chest X-ray revealed a pseudo-nodular density in the left anterior pericardial region, without signs of pleural effusion (Figure 1). High-resolution computed tomography (HRCT) showed two subpleural parenchymal consolidations: one localized in the left upper lobe and a larger one with aerial bronchogram localized in the lingula; there were no signs of pulmonary thromboembolism (Figure 2). The patient was then admitted to our ward.

Here the patient started antibiotic therapy with Macrolide and Cephalosporin for pneumonia suspect, even though phlogistic biomarkers such as WBC and PCR resulted in the normal range. The patient was always eupneic in ambient air with normal peripheral capillary oxygen saturation.

Due to the autoimmune disease of the patient and her family history of neoplastic diseases, pulmonary consolidations were studied through PET-CT and needle biopsy via CT guidance. At the PET-CT the PNs showed a high contrast uptake (SUV max 10.9) (Figure 3). PET-CT also showed multiples areas of high uptake in several hepatic segments (SUV max 13.7) as well as in the hilar hepatic, peripancreatic and paracaval lymph nodes (SUV max 16.5) (Figure 4).

Four tissue biopsies were taken from the left upper lobe consolidation, four from the hepatic areas and one from the peripancreatic lymph node. The histologic diagnosis consisted in diffuse large B cell

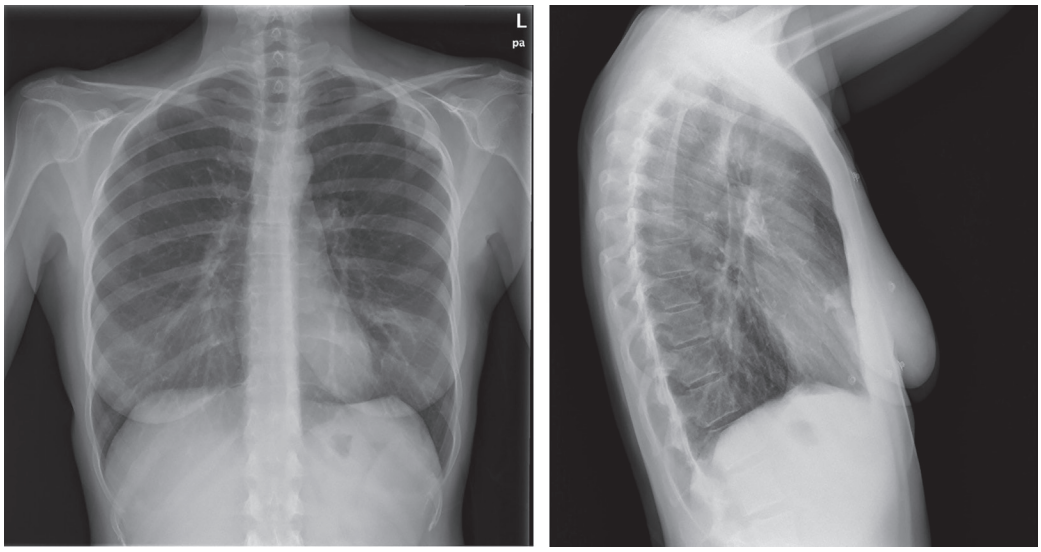

Figure 1. The chest X-ray showed a pseudo-nodular density in the left anterior pericardial region.

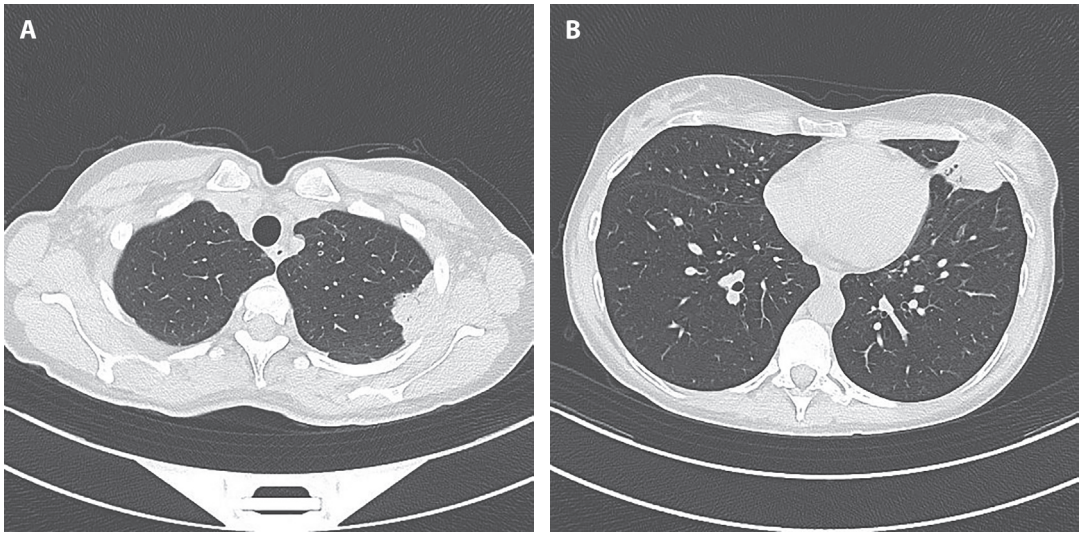

Figure 2. The HRCT showed two subpleural parenchymal consolidations localized in the left upper lobe (A) and in the lingula (B).

lymphoma with hepatic localizations; the neoplastic cells expressed: CD-4, MUM-1, Bcl-6 and CD10. The Ki67 index was approximately of 50-60%. The bone marrow biopsy didn't show abnormalities. The patient was then taken in charge by the Hematology Day Service to start chemotherapy according to the R-CHOP (rituximab, cyclophosphamide, doxorubicin, vincristine, prednisolone) protocol.

Discussion

The risk of B-cell lymphoma is 15 to 20 times as high among patients with pSS as in the general population (lifetime risk, 5 to 10%) (10,11) a finding that has been attributed to the chronic B-cell activation in this condition. These lymphomas are mostly B-cell non-Hodgkin's lymphomas (4).

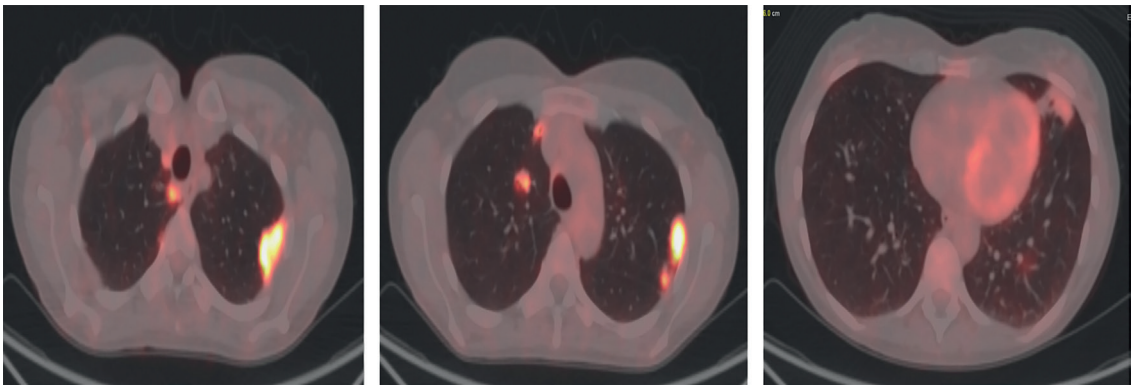

Figure 3. PNs at the PET-CT with a high contrast uptake (SUV max 10.9).

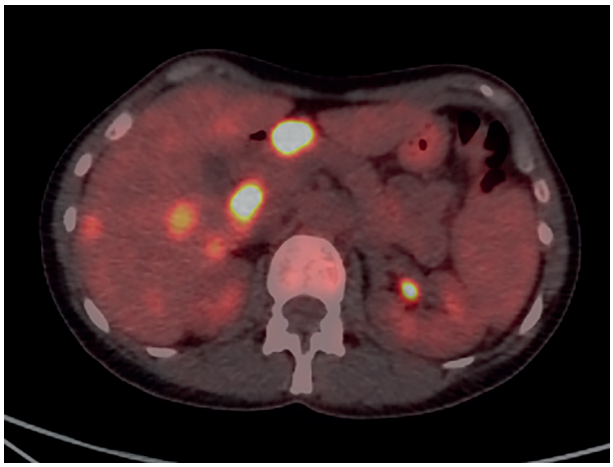

Figure 4. Multiples areas of high uptake in several hepatic segments (SUV max 13.7) and in the hilar hepatic, peripancreatic and paracaval lymph nodes (SUV max 16.5) at the PET-TC.

Lymphoproliferative involvement of the lungs can present as non-resolving consolidations, focal nodules (particularly in the presence of parotitis), lymphadenopathy, and cystic lesions accompanied by adjacent nodules and may be asymptomatic (12).

Moura and colleagues evaluated 41 patients with pSS that had histologically characterized PNs/ mass. The PNs proved to be non-Hodgkin lymphoma (NHL) in 16 patients (39%), lung carcinoma in 11 patients (27%), other malignancies in 2 patients (5%), and benign diseases in remaining 12 patients (29%), including 7 with amyloidomas. Patients with NHL were younger, non-smokers and had a family history of neoplastic diseases while smoking exposure was more prevalent in patients with lung carcinoma. Patients with NHL had a higher number of PNs and more often manifested random distribution, cysts, ground-glass changes and consolidations. Upper and/or mid-lung location, spiculated borders, solitary nodule, increasing size, and higher SUVmean on FDG-PET scan were associated with lung carcinoma (9).

Another study found that focal lung nodules and consolidations are present in approximately one-third of Sjögren's patients with pulmonary lymphoma vs 3% without lymphoma (13).

In the retrospective study of Hansen and colleagues 50 patients with lymphoma and sjögren syndrome (SS) diagnosis were studied. Pulmonary lymphomas developed in 10 of these patients, 8 of whom were woman with a mean age of 59.7 years. Seven patients had primary SS, three had secondary SS in association with rheumatoid arthritis. The mean interval between the onset of SS and lymphoma was 5.4 years. The authors concluded that pulmonary involvement is common in patients with lymphoma associated with SS; thus, lymphoma should be considered in the differential diagnosis of pulmonary lesions in patients with SS (14).

There are two dominant types of lymphoma in patients with pSS: (i) low-grade marginal-zone lymphoma – extra-nodal, related to mucosa-associated lymphoid tissue (MALT), and nodal; and (ii) aggressive lymphomas such as diffuse large B-cell lymphoma (DLBCL) that originate from high-grade transformation of MALT lymphoma in about 10% of the cases (15,16).

The patience of our report presented most of the features highlighted in the study of Moura and colleague: she was a young, non-smoker female with a family history of neoplastic diseases. She had more than one PN and consolidations at the HRTC.

Conclusions

Patients with pSS should be evaluation for potential pulmonary signs and symptoms. It may also be helpful a multidisciplinary approach for the patients with suspected or confirmed pulmonary complications that may include a rheumatologist, a pulmonologist, a pathologist, a radiologist, and, when appropriate, an oncologist.

Consent for Publication: Informed consent for publication of this case report and any accompanying images was obtained from the patient.

Conflict of Interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article.

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