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ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2013, 30(4):504–505

Medical Imaging Quiz – Case 31

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A 73-years-old patient, current smoker (50 p/y), with no medical history presented at our hospital complaining of prolonged low grade fever, non-productive cough, malaise and anorexia for the last 20 days.

Physical examination revealed crackles on the right pulmonary base. $SatO_2$ was 97%. Blood tests showed mild leukocytosis (77% PMN, 12% LYM, 2% EOS) and increased CRP. The other laboratory tests were normal, lung function tests were normal, and PPD skin test negative (0 mm). The chest x-ray revealed a peripheral, homogeneous, poorly defined opacity, on the right middle lung zone (fig. 1). The computed tomography (CT) findings were: peripheral area of consolidation of about 6 cm, with satellite ground glass opacities, on the superior segment of the RLL (figures 2, 3).

At first, the patient was treated as having a community acquired pneumonia and received combined antibiotic therapy (amoxicillin-clarithromycin) for 10 days. There was no remission of the symptoms or change of the radiological findings; so further investigations were carried out.

Bronchoscopy was done: The BAL differential cell count showed moderate cellularity with mixed pattern, negative for malignancy and negative cultures. Because these findings were not pathognomonic, CT guided lung biopsy was performed.

The histological examination revealed typical findings of organizing pneumonia (OP) with presence of fibroblastic tissue in respiratory bronchioles and alveolar ducts (intraluminal polyp formations) and mild thickening of the bronchial wall without architecture destruction.

The patient underwent corticosteroid treatment with clinical improvement and complete lysis of the radiological findings.

Because all possible underlying causes were excluded, the diagnosis was considered to be cryptogenic organizing pneumonia (COP).

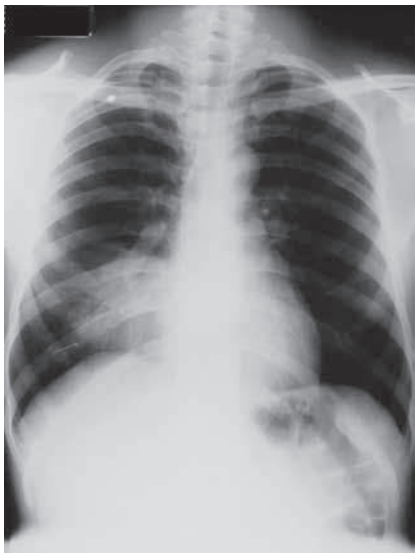

Figure 1

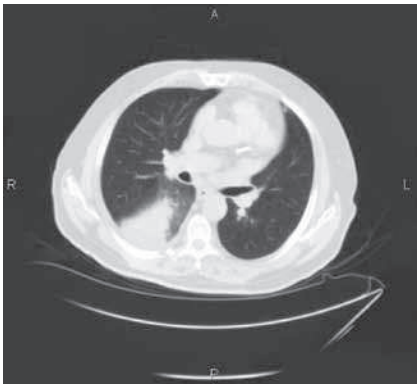

Figure 2

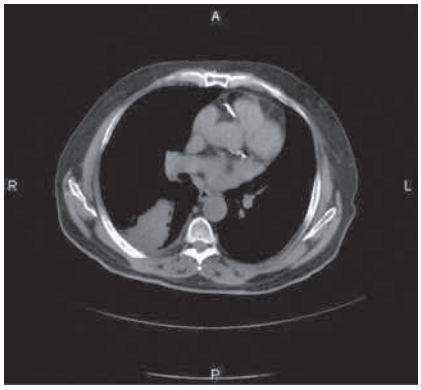

Figure 3

Comment

OP is included in the category of interstitial pneumonias. Its prevalence is 6–7 cases per 100.000. It is either idiopathic COP or secondary OP. The most common causes of secondary OP include: infections, drugs, connective tissue disorders, malignancy (solid organ or hematologic), radiation, aspiration, organ transplant and inflammatory bower disease.

The most common CT findings of OP are: patchy bilateral consolidations (occasionally with air bronchogram) (80–90%), ground glass opacities (60%) or crazy paving, lower lung predominance, peripheral and or subpleural distribution, peribronchovascular distribution with migratory tendency (even without treatment). Other findings include bronchial wall thickening, centrilobular nodules (1–10 mm) (30%) and nodular opacities (1–2 cm) (20%), pleural effusion (10–30%) and mediastinal lymphadenopathy (20–40%). A pathognomonic imaging finding of early stage OP is the reverse halo sign or atoll sign (ring-like consolidation with central ground glass) (20%). Ten percent of OP cases have focal pattern (single focal nodule or consolidation) without any other imaging findings.

The diagnosis of OP can be made based on the patient's clinical history, laboratory tests and radiological findings, but it is confirmed histologically (lung biopsy). Therefore, CT guided lung biopsy, VATS or open lung biopsy are necessary in order to confirm the diagnosis.

OP is occasionally self-treated, but usually requires treatment with corticosteroids. A small percentage of patients does not respond to treatment and develops progressive fibrosis.

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Diagnosis: *Cryptogenic organizing pneumonia (COP)*