We report a private practice experience of two cases of novel coronavirus pneumonia (COVID-19) patients who were referred at our attention due to the persistence of a-specific symptoms.

Case 1
A 63-year-old man affected by hypertension performed X-ray examination for dispnoea: he had history of two-days-fever (37.5° C) one week before. Patient did not perform chemistry analysis before imaging examinations. X-ray exam did not show any abnormalities; but after 2 days he underwent high-resolution computed tomography (HRCT) examination as a further study.

Case 2
A 80-year-old woman with asthenia, fever and mental confusion, recommended by her doctor, performed X-ray of the chest. The exam showed an opacity in the right lobe, therefore HRCT diagnostic deepening was suggested. The patient reported that in the last two weeks she only met her children and did not perform chemistry analysis before.

Imaging Findings:
Non-enhanced CT exams were acquired with a Multislice-Computed Tomography scanner (GE Optima 64, General Electric Healthcare, Milwaukee, WI) with the following parameters: kV 120, mAs 80-300, rotation time 0.5 sec, slice thickness 1.25 mm.

HRCT image of case 1 showed a rare diffuse ground-glass opacity (GGO) with interlobular septal thickening in the subpleural area of the postero-inferior segments of both lobes with a more accentuated finding on the right (Fig. 1). HRCT image of case 2 reported different pattern with bilateral multifocal GGOs associated with consolidation areas with patchy distribution, predominantly peripheral/subpleuric and with greater involvement of the middle and lower lobes (Fig. 2).

Discussion:

The new coronavirus, SARS-CoV-2 (severe acute respiratory syndrome coronavirus-2), is identified as causing lung infection, now called COVID-19 (Coronavirus disease-2019). It was first reported in the city of Wuhan in central China, but at present it has spread all over the world, therefore it has been classified by the World Health Organization as pandemia. [1]

The infection tends to be asymptomatic or with aspecific symptoms (fever, cough, asthenia, diarrhoea). However, in almost 10% of cases, generally with older people with comorbidity, it could evolve into respiratory failure for diffuse alveolar damage (acute respiratory distress syndrome), multi organ failure (MOF) extrapolumary and shock, up to the exitus [2-4].

At the early stage, X-ray examination should be normal; in the advanced stages X-ray of the chest shows bilateral multifocal alveolar opacifications, which tend to confluence until the lung is completely opaque, with possible small association of pleural fluid. [5]

At HRCT, COVID-19 pneumonia has various and nonspecific findings and patterns, that may be encountered in other lung infections, such as influenza A, CMV, other coronaviruses (SARS, MERS), streptococcus and pneumonia from atypical germs (clamydia, mycoplasma); however in literature different patterns of this viral infection at different stages of the disease are described.

In the early stage, focal or diffuse GGOs are the most common finding as reported by different studies with an incidence ranging from 57 to 98% [6-8].

Advanced disease is characterised by multifocal and bilateral GGOs, ‘crazy paving’ pattern, reversed halo-sign until pulmonary consolidations.

‘Crazy paving’ pattern is sometimes present and according to the study of Pan et al. is associated with aprogression from advanced to peak stage [9].

Reversed halo-sign was found in different cases of advanced disease and its considered a sign of progression [8] Multifocal, patchy, or segmental consolidation, distributed in subpleural areas or along bronchovascular bundles, is usually presented and associated with progression of clinical symptoms.

Other signs described in literature are vascular enlargement nearby the lesions, focal nodules and fibrosis [10]. Lymph node enlargement is not often encountered in patients affected by COVID-19 pneumonia.

According to the study published by Pan et al. case 1 should be classified as early stage disease and the second one as progressive stage disease [9]. Patients were immediately informed of the risk of COVID-19 infection and directed to the first aid relevant facilities. The final diagnosis was made by real time – polymerase chain reaction (RT-PCR) obtained from oropharyngeal swab specimens.
Written patient consent for this case was waived by the Editorial Board. Patient data may have been modified to ensure patient anonymity.

**Differential Diagnosis List:** Coronavirus disease 2019 pneumonia (COVID-19), Non-specific interstitial pneumonia, Mycoplasma pneumonia, Viral pneumonia, Bacterial pneumonia, Hypersensitivity pneumonitis (HSP)

**Final Diagnosis:** Coronavirus disease 2019 pneumonia (COVID-19)

**References:**

https://www.who.int/csr/disease/coronavirus_infections/


Figure 1

Description: Axial (A) and coronal (B) HRCT images show diffuse ground-glass attenuation in the postero-inferior segment of the right lobe with subpleural laminar thickening; smaller alteration with similar densitometric characteristics in the corresponding left-lobe. Origin: © Medicenter Group S.r.l. Via Salaria 187, Monterotondo (RM), 00015
**Description:** Axial HRCT images at different sections (A-B-C) reveal multifocal and bilateral GGOs and "crazy paving" pattern  

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