



X-RAY AND CT DIAGNOSIS OF ASYMPTOMATIC, UNSUSPECTED COVID-19 IN CANCER PATIENTS

Radiodiagnosis

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ABSTRACT

Introduction : Coronavirus disease (COVID-19) is caused by strain of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) that has been pandemic around the globe in recent times.

In INDIA, we do not have an adequate resources for COVID-19 testing to all people, so according to guidelines testing is done for suspected and symptomatic contact patients. Hence imaging finding helps in aid in diagnosis of asymptomatic COVID 19 patients

Case Report: Two cancer patients, clinically unsuspected for COVID-19 were imaged for non-respiratory-related symptoms with a portion of the lungs in the imaged field in Siemens 16 slice CT scan machine.

Both patients had suspicious CT scan findings for COVID-19, directing the interpreting radiologist to suggest RT PCR testing for COVID-19.

All 2 patients turned out to be infected with COVID-19

Conclusion : Using suspicious imaging finding of COVID-19 on any CT scan when a portion of the lungs is included, asymptomatic, unsuspected patients of COVID-19 infection can be quarantined earlier to limit exposure to others.

KEYWORDS

COVID-19, ill defines soft tissue opacities, ground glass haziness

INTRODUCTION:

Coronavirus disease 2019 (COVID-19) is caused by a novel strain named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). First case of this was discovered in Wuhan, China, in December 2019. The virus has quickly spread around the world and has been declared a global pandemic by the World Health Organization.

As of April 23rd, 2020, there are 23,040 confirmed cases of COVID-19 in India [1], there were 2624 confirmed positive cases in Gujarat [2]

In the India, health care facilities do not have an adequate facilities to fulfil demand for COVID-19 real-time polymerase chain reaction (RT-PCR) assays to possible cases.

DISCUSSION

Imaging findings for COVID-19 are non-specific and variable but most commonly show rounded pulmonary parenchymal ground-glass opacities in a predominantly basal and peripheral distribution without lung cavitation, discrete pulmonary nodules, or pleural effusions [3].

Other less common radiological finding include bronchial wall thickening, linear opacities, crazy paving pattern, and the reverse halo sign.

CT scan imaging within the first 2 days of being infected can also show normal chest CT scan findings [4].

The American College of Radiology not recommended chest CT scan as a screening test for COVID-19 [5], in patients with possible exposure to COVID-19 or suspicious symptoms, the chest CT findings may be used along with the RT-PCR assay to triage patients requiring hospitalization. In this case series, two patients were imaged without any of the common COVID-19 symptoms which are cough, fever, difficulty in breathing, sore throat, body pain [6].

Here, we present a series of 2 cancer patients imaged for non-respiratory-related symptoms with a portion of the lungs in the imaged field. Each patient had suspicious radiological findings for COVID-19, which directed interpreting radiologist to suggest the RT PCR test for COVID-19.

Ultimately, both cancer patients were found to be infected with COVID-19

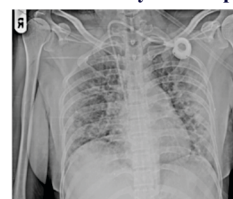
PRESENTATION OF CASE:

- Two cancer cases of clinically unsuspected COVID 19 with suspicious COVID-19 features on X-ray and CT scan are explained and discussed.

Case Report 1

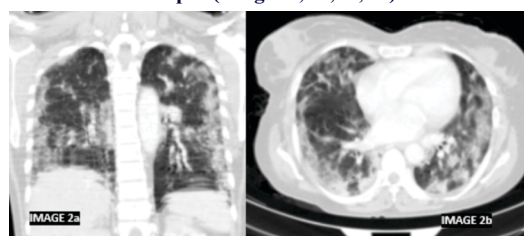
- A 49-year-old woman with carcinoma of the right breast had been admitted for complaint of disorientation to rule out brain metastasis and for further management
- Patient had history of systemic chemotherapy on 17th April
- On 23rd APRIL, chest X ray of the patient was done,
- The chest X-ray (image 1) demonstrated presence of multiple ill defines peripheral soft tissues in both lung fields
- Patient had CBC report showing neutropenia
- Patient has denied common COVID-19 related complaint like cough, sore throat, fever, body ache
- Not had international or local travelling history
- Patient was from area named Behrampura, a COVID 19 red zone in Ahmedabad
- Patient denied any contact with COVID 19 positive patient or any person with symptom of COVID 19
- Patient had undergone CT chest and CT brain on 24th april to evaluate response to chemotherapy and to rule out brain metastasis
- CT chest (image 2a,2b,2c,2d) demonstrated multiple peripheral soft tissue opacities with ground glass haziness, suspecting features of COVID-19 in addition to enhancing mass lesion in right breast
- Referring doctor is informed for the same and patient had undergone RT PCR for COVID 19 and report demonstrated COVID 19 positive
- Patient is then sent to COVID care ward and necessarily step were taken

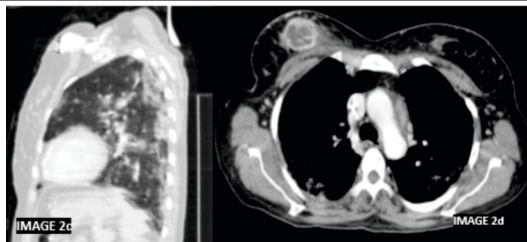
The chest X-ray on 23rd april (image 1)



Chest X-ray PA view image 1- show peripherally based multiple patchy areas of ground glass haziness in b/l lung fields with associated reticular pattern and PORT device

CT scan chest on 24th April (image 2a, 2b, 2c, 2d)



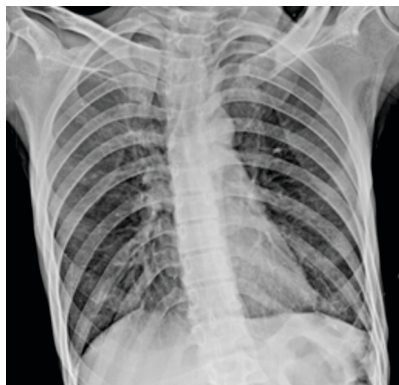


Coronal (image 2a), Axial (image 2b), and sagittal (image 2c) lung window images shows multiple patchy ground glass haziness in both lung fields predominantly in peripheral and basal locations along with enhancing mass lesion in UIQ of right breast on soft tissue window (image 2d)

Case Report 2

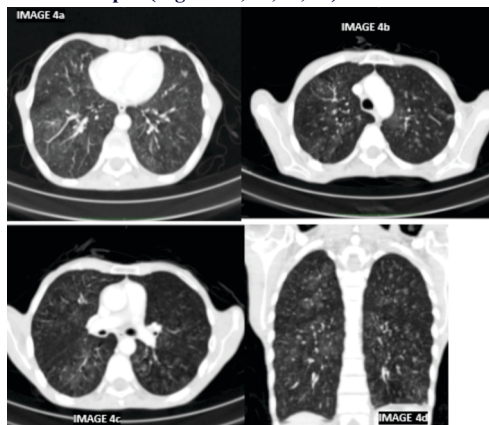
- A 40-year-old man with carcinoma of the oropharynx has been admitted for further management of the condition
- On 27th APRIL, chest X ray of the patient was done,
- The chest X-ray demonstrated clear lung fields (image 3), not showing any suspicious feature of COVID 19
- Patient has denied common COVID-19 related complaint like cough, sore throat, fever, body ache
- Not had international travelling history, or history of COVID positive in family member, but patient residency was from red zone in Ahmedabad named Dariyapur
- Patient had undergone CT chest to evaluate extension of disease and for planning further management
- CT chest (image 4a,4b,4c,4d) demonstrated multiple patches of soft tissue opacities in both lung fields with ground glass haziness, characteristic suspicious features of COVID-19
- Referring doctor is informed for the same and patient had undergone RT PCR for COVID 19 and report demonstrated COVID 19 positive
- Patient is then sent to COVID care ward and necessarily step were taken

The chest X-ray on 23rd April (image 3)



Chest X ray PA view (image 3), showing clear lung field without any suspicious features of COVID 19

CT chest on 24th April (Figure 4a, 4b, 4c, 4d)



CT scan lung window axial view images (image 4a,4b,4c) at various levels and coronal lung window image (image 4d) showing multiple patches of ground-glass haziness in both lung fields, predominantly in b/l lower lobes and in peripheral locations

CLINICAL DIAGNOSIS:

As patient were asymptomatic for COVID-19, clinician were not suspecting the same

FINAL DIAGNOSIS:

COVID-19 in two unsuspected cancer patients after reviewing CT scan reports

CONCLUSION

Using suspicious radiological finding of COVID-19 on any CT scan study when the lung field is included, asymptomatic, unsuspected patients for COVID-19 infection can be directed to undergone RT-PCR testing for the COVID 19. Hence, early diagnosis of COVID 19 patient can be done and pateint can be quarantined earlier.

This will help to limit exposure of COVID 19 patient to other healthy people.

It can also help health care worker during the triage of hospitalisation of the same patient and further precautions in hospital

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