



## **An Interesting Case of Achalasia Cardia with Co-Existing Coronavirus 19 Infection**

**Rishabh Gupta<sup>1\*</sup>, Gaurav Mishra<sup>1</sup> and R. P. Dhande<sup>1</sup>**

<sup>1</sup>Department of Radiology, Jawaharlal Nehru Medical College, Datta Meghe Institute of Medical Sciences, Wardha, India.

### **Authors' contributions**

*This work was carried out in the literature searches. All authors read and approved the final manuscript.*

### **Article Information**

DOI: 10.9734/JPRI/2021/v33i35B31920

#### Editor(s):

- (1) Dr. Paola Angelini, University of Perugia, Italy.
- (2) Dr. Jongwha Chang, University of Texas, College of Pharmacy, USA.
- (3) Dr. Giuseppe Murdaca, University of Genoa, Italy.

#### Reviewers:

- (1) Wasim M Dar, Santosh Hospital, India.
  - (2) K. Kant, Dr. S.N. Medical College, India.
  - (3) Surya Rao, Saveetha Medical College & Hospital, Saveetha Institute of Medical and Technical Sciences, India.
- Complete Peer review History: <http://www.sdiarticle4.com/review-history/70528>

**Case Report**

**Received 02 May 2021**  
**Accepted 06 July 2021**  
**Published 07 July 2021**

### **ABSTRACT**

With this case report, we emphasize the unique fact that chest pain and discomfort in COVID-19 infected patient can be due to other causes and it should not be overlooked. The SARS-CoV-2 is a novel strain of coronavirus, the homo-sapiens have recently been attacked in a large number. Common clinical symptoms of COVID-19 patients infected include high grade fever, weakness, dry cough, breathlessness and chest pain with discomfort. We are presenting a case report of covid-19 infected patient having chief complaints of chest pain and discomfort. The patient was evaluated using computed tomography imaging and- Achalasia cardia was diagnosed and needful was done. It should be noted that multiple conditions can co-exist along with COVID-19 infection for which proper and complete evaluation needs to be done keeping other possibilities in mind.

**Keywords:** Corona virus; chest pain; esophagus; achalasia; systemic sclerosis; carcinoma.

## 1. INTRODUCTION

The SARS-CoV-2, a novel strain of coronavirus, has struck the homo-sapiens on a large magnitude. Common clinical symptoms of COVID-19 patients infected include high grade fever, weakness, dry cough, breathlessness and chest pain with discomfort [1]. The virus can cause variable manifestations by invading different tissues of the body. Respiratory system when invaded by SARS-CoV-2 produces symptoms like high grade fever, sore throat, dry cough, and breathlessness. This virus causes headache, giddiness, and a confused state when it involves the nervous system; diffuse pain in abdomen with diarrhoea when it infects digestive system; chest pain when cardiovascular system is effected and so on). The incidence rate for headache is 1.7–33.9%, for sore throat is 0.7–47.1%, for myalgia /arthralgia is 1.5–61.0%, for chest pain is 1.6–17.7%, and for abdominal pain is 1.9–14.5% [2]. The low incidence of chest pain in COVID infection, makes this case unique.

## 2. CASE PRESENTATION

### 2.1 Patient Information

A 48 years old male was admitted to Acharya Vinoba Bhave Rural Hospital with a chief complaint of chest pain and discomfort with fever, sore throat and arthralgia. The patient tested positive for SARS-COV2 infection. To help in swallowing solid food, the patient had to

consume a lot of water. The patient experienced loss in weight loss with no anorexia.

### 2.2 Clinical Findings / Physical Examination

Clinical examination of the patient revealed high grade fever, with high pulse rate of 122 / minute. On thoracic auscultation the air entry was reduced bilaterally and wheeze was audible in bilateral lower zones. On abdominal examination, tenderness was present in epigastric region.

### 2.3 Diagnostic Intervention

Blood works revealed high TLC count and raised CRP. Computed Tomography revealed dilatation of the distal oesophagus with minimally distended stomach. There was no evidence of any mass lesion arising from oesophageal wall along with features of Covid pneumonia. The final diagnosis made on the basis of CT was achalasia cardia with COVID-19 pneumonia.

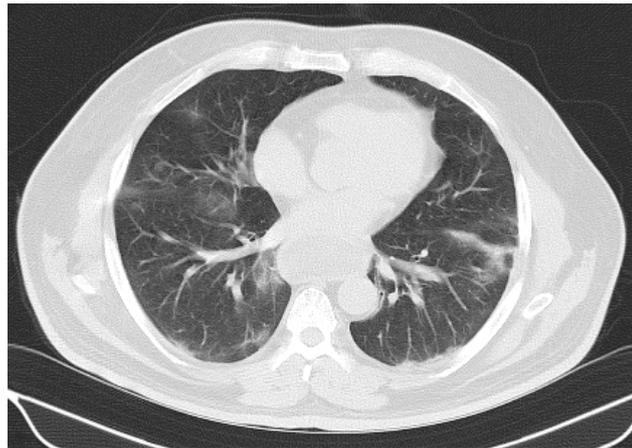
### 2.4 Therapeutic Intervention

The patient was treated for COVID infection with Fabipiravir tablets, multivitamins, zinc tablets, vitamin C tablets with proper antibiotic coverage. Achalasia was treated conservatively with antacids, calcium channel blockers, and proton pump inhibitors with soft diet. The patient was advised surgery after recovery from COVID infection.

**Axial CT scan of thorax -soft tissue window: shows dilated esophagus with air fluid level within**



Fig. 1. Axial XT scan of thorax showing markedly dilated esophagus



**Fig. 2. Axial section HRCT thorax showing diffuse central and peripheral ground glass opacities in bilateral lung fields S/O atypical viral pneumonia**



**Fig. 3. Sagittal soft tissue window of CT scan thorax showing dilated esophagus with air fluid level within**

### 3. DISCUSSION

The exact mechanism of SARS-CoV causing chest pain is not yet known. Chest pain may result from pleural inflammatory reaction or due to any other co-existing pathological disease [3]. Abdominal pain and discomfort is seen only in severely infected patients. The prognosis is poor in case of abdominal symptoms being present in a covid patient [4]

Achalasia cardia is diagnosed on CT when patient has an esophagus that is moderate to severely dilated (mean intraluminal diameter of 4.36 cm at level of carina) with wall thickness

that is normal. Complications in achalasia patients are metaplasia followed by carcinoma, aspiration and perforation of esophagus. Computed tomography is not indicated as a routine study, but it becomes very useful in cases with complications. Upper GI endoscopy and manometry helps exclude other types of motility disorders. CT thorax may show dilated esophagus with fluid levels, mega esophagus, sigmoid esophagus, atypical features that prove presence of other co-existing diseases or benign/malignant lesions [5]. Acute total airway compression is one of the most common and fatal CT finding in a case of achalasia [6]. Atypical symptoms of achalasia should be

considered as warning signs. One should carefully consider every symptom for proper timely therapy in order to reverse the condition of mega esophagus.

Achalasia being a rare esophageal disorder, usually has a delayed diagnosis and the symptoms are often misinterpreted as other gut disturbances, such as gastroesophageal reflux [7]. Tracheal compression is an extremely rare feature of achalasia and very few cases of such complications are present in the literature [8]. The radiological diagnosis of airway obstruction may not co-relate with the stage of disease, hence cases with mild symptoms may still have airway obstruction [9]. In the present case, it becomes extremely important to differentiate the cause of altered respiratory functions- airway obstruction or COVID-19 infection. Respiratory symptoms were mild at initial diagnosis of achalasia and they improved as treatment for COVID infection was given. However, if adequate treatment had been delayed, distinct pulmonary complications would have been most likely.

Other causes of dilated esophagus include systemic sclerosis and esophageal carcinoma. 66.3% of systemic sclerosis patients have co-existing esophageal dilatation. The esophagus is dilated to a greater extent in systemic sclerosis patients with interstitial lung disease. The measurement of esophageal lumen diameter on CT is a useful marker that indicates risk for developing lung disease [10]. In systemic sclerosis, CT criteria of esophageal dilatation is presence of non loculated collection of intra luminal air in part of esophagus below aortic arch. In case of esophageal carcinoma at lower esophageal end, the air filled esophagus should have diameter of 10 mm or more on coronal section with presence of an abnormal air-fluid level within [11-14]. In our patient, there was no abnormal growth in esophageal wall or GE junction, and hence carcinoma was ruled out.

With this case report, we emphasize the unique fact that chest pain and discomfort in COVID-19 infected patient can be due to other causes and it should not be overlooked. Take away lesson learnt from this case was that multiple conditions can co-exist along with COVID-19 infection, and we should properly evaluate the patient.

#### 4. CONCLUSION

We present a case of a 48 years old male suffering from COVID-19 infection with co-

existing achalasia. The patient was conservatively managed with drugs such as calcium channel blockers, antacids and proton pump inhibitors. The patient improved clinically after treatment, was discharged and advised surgery for achalasia.

#### ETHICAL APPROVAL AND CONSENT

As per international standard or university standard guideline patients consent and ethical approval has been collected and preserved by the authors.

#### COMPETING INTERESTS

Authors have declared that no competing interests exist.

#### REFERENCES

1. Wu J, Wu X, Zeng W, Guo D, Fang Z, Chen L, Huang H, Li C. Chest CT findings in patients with coronavirus disease 2019 and its relationship with clinical features. *Investigative radiology*. 2020;55(5): 257.
2. Weng LM, Su X, Wang XQ. Pain Symptoms in Patients with Coronavirus Disease (COVID-19): A Literature Review. *Journal of Pain Research*. 2021; 14:147.
3. Li MY, Li L, Zhang Y, Wang XS. Expression of the SARS-CoV-2 cell receptor gene ACE2 in a wide variety of human tissues. *Infectious diseases of poverty*. 2020;9:1-7.
4. Tian Y, Rong L, Nian W, He Y. gastrointestinal features in COVID-19 and the possibility of faecal transmission. *Alimentary pharmacology & therapeutics*. 2020;51(9):843-51.
5. Rabushka LS, Fishman EK, Kuhlman JE. CT evaluation of achalasia. *Journal of Computer Assisted Tomography*. 1991; 15(3):434-9.
6. Giustra PE, Killoran PJ, Wasgatt WN. Acute stridor in achalasia of the esophagus (cardiospasm). *The American journal of gastroenterology*. 1973;60(2):160-4.
7. Kathis JM, Foltys DB, Scheuermann U, Stempel M, Niebisch S, Ebert M, Jansen-Winkeln B, Gockel I, Lang H. Achalasia with megaesophagus and tracheal compression in a young patient: a case report. *International Journal of Surgery Case Reports*. 2015;14:16-8.

8. Ho V, Whiting P. Acute airway obstruction secondary to achalasia mega-oesophagus. *Anaesthesia and Intensive Care*. 2008; 36(4):582-4.
9. Barr GD, MacDonald I. Management of achalasia and laryngo-tracheal compression. *The Journal of Laryngology & Otology*. 1989;103(7):713-4.
10. Takekoshi D, Arami S, Sheppard TJ, Cole-Saffold P, Michel JC, Kondos GT, Schraufnagel DE. Computed tomography of the esophagus in scleroderma and lung disease. *The Tohoku Journal of Experimental Medicine*. 2015;237(4):345-52.
11. Quint LE, Glazer GM, Orringer MB, Gross BH. Esophageal carcinoma: CT findings. *Radiology*. 1985;155(1):171-5.
12. Ahmed N. You Are What You Eat: A Research on the Attitudes and Beliefs about Food and Health among Primary School Children in Suffolk. *International Journal of Intensive Care*. 2018;14(01): 15–18.
13. Antino N. Health Care Service Legislation Impact Analysis. *International Journal of Intensive Care*. 2018;14(01):19–22.
14. Pate, Bhavna Shrirang, Meenakshi Eknath Yeola, Atul Gawande, Amit Kumar Singh, Harshal Atul Tayade. Best practices for endoscopic procedures in Covid-19 pandemic. *Journal of Evolution of Medical and Dental Sciences-JEMDS*. 2020;9(49): 3760–66.  
Available:<https://doi.org/10.14260/jemds/2020/825>

---

© 2021 Gupta et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*  
*The peer review history for this paper can be accessed here:*  
<http://www.sdiarticle4.com/review-history/70528>