Role of radiology in COVID-19 pandemic and post COVID-19 potential effects on radiology practices

Currently, the world is experiencing the biggest healthcare crisis in modern history. A very contagious novel coronavirus SARS-CoV-2 has caused a pandemic initially started in Wuhan, China, and later spread to other countries and continents. At the moment more than five million people have been infected by SARS-CoV-2 globally and accounts for more than one-third of a million deaths in more than 200 countries worldwide. Early diagnosis of COVID-19 and management of complications is critical for better prognosis. In this regard, imaging modalities have played a vital front line role in diagnosis, grading of disease and monitoring the management course justifying its importance. Chest radiograph can detect patchy opacities and chest CT can appreciate multiple, peripheral ground-glass opacities and areas of consolidation. These findings are usually seen around bronchovascular bundle in the lung field. Although these findings are sensitive but not specific for COVID-19, CT chest has been vital in detecting early disease changes. These findings can change the management plan and isolate the patient appropriately. Due to the risk of spread, the CT scan machine must be disinfected after scanning every suspected COVID-19 patient.

To curb the spread of the disease, governments around the world have partially or completely shut down all non-essential services and implemented various measures. These measures have negatively impacted businesses, non-emergent healthcare provision, education, research and other aspects of life. As far as radiology is concerned, these measures have significantly reduced all imaging scans but outpatient volume has been severely reduced to 30-50% when compared with data from previous years. Additionally, following these guidelines all non-emergent outpatient imaging scans including ultrasound, radiographs, CT, MRI and radiological interventional procedures have been rescheduled. Overall imaging volumes have dwindled to an all-time low. Due to reduced road traffic and fewer accidents, the volume of emergency scans has reduced worldwide. Additionally, stay-at-home orders and fear of exposure to COVID-19 from hospitals have played a deterring role causing the decreased volume of outpatient scans. This has impacted cancer patients follow up and routine cancer imaging too. Limitation on non-urgent imaging has caused the rescheduling of screening mammograms and lung cancer screening to prevent disease spread and enhance the dedicated facility for COVID-19 imaging. This will lead to a spike in demand for cancer screening in the near future once the pandemic is contained that needs to be addressed.

These measures have also affected the educational and research activities related to radiology. Due to the suspension of the normal routine and limited scans performed, many radiology trainees have been redeployed to do other tasks related to the current pandemic. Many hospitals during this pandemic are operating radiology using remote access or by staggering shifts. This has also impacted the trainee learning process. Similarly, many current or prospect research projects have been shut close either because of disruption of normal routine or due to uncertain fiscal situation and unavailability of funds. The lack of revenue and economic crisis caused by this pandemic has resulted in decreased or stopped funding for research projects.

The effects of this pandemic reach far beyond these aspects. Economically, this pandemic has detrimental effects and significant lost revenues have forced many small operations to temporarily salary reduction, reduce staffing, furlough employees or shut down operations altogether. According to a report, outpatient imaging services will be impacted the most and should expect a decrease in imaging volume to less than half at least for the next quarter year. This economic recession has caused a rise in global unemployment and limiting opportunities for locum or part-time radiologists. Furthermore, facility alterations to adjust to the new parameters set by COVID-19 guidelines have also increased expenditures.

Even after the pandemic is gone and behind us, we shall enter a new ‘post-COVID era’ and still feel its impact. We shall not be able to go back to our old routines possibly. The new normal will look completely different. This pandemic has fast-tracked innovation and redefined how we will run our operations in the future and new routines will be formed. Even during this COVID-19 era, radiology has seen an increasing trend towards safety precautions and safe environment, judicious use of imaging, remote access to scans, limited patient interaction, telemedicine...

References


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