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To the editor:

Departments of Radiation Oncology Must Prepare for COVID-19 Outbreak

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To the editor:

A novel coronavirus (2019-nCoV) was first detected in Wuhan, Hubei, China, in December 2019. It is highly contagious and has quickly spread to other provinces of China and other countries within 1 month. 2019-nCoV can be transmitted by asymptomatic infectors, and it has been confirmed to be transmitted by droplets and contact. It is now having a serious socioeconomic impact worldwide. In China, a total of 78,064 patients with COVID-19 have been identified thus far, and containment in Hubei is still in progress. A total of 400 patients with COVID-19 have been reported in Italy as of 9 o'clock on March 26th, 2020. The world is ongoing in pandemic. As the outbreak progresses, cancer patients receiving radiation therapy and healthcare professionals (such as medical doctors, nurses, medical physicists, and radiation therapists) are at risk of infection.

The first patient was diagnosed in South Korea, the nearest country to China, on January 20, 2020. Subsequently, the Korea Centers for Disease Control and Prevention (KCDC) initiated an in-depth epidemiological investigation and contact tracing. By February 18, 2020, the outbreak seemed to be well controlled; a total of 30 patients had been confirmed to have COVID-19. However, outbreaks caused by gatherings of certain religious groups in Daegu rapidly increased the number of patients to 9241 on March 26th, 2020. Many patients were diagnosed with COVID-19 in Daegu, and hospital infections are increasing consecutively. According to the KCDC guidelines, when an infected person is diagnosed, the area where the patient was present is closed for 2–3 days and residents quarantined. People in close contact with the infected are isolated for 14 days. At a university hospital in Daegu, radiation therapy patients were diagnosed with COVID-19. The department was closed for quarantine for two days and healthcare professionals were screened for COVID-19.

Patients who receive radiation often visit the department daily for standardized treatment times. In addition, radiation therapists have no choice but to interact with the same patients every fraction during the patient set-up process. Therefore, when an infected person is diagnosed, patients who were treated during the same time or the radiotherapist in the treatment room are isolated and the department is quarantined for 2–3 days.

Strict scheduled treatment should be provided for outpatients. Approximately 30 patients are treated per machine per day; hence, the number of patients who are waiting for treatment generally increases. The strict slot system with longer treatment intervals aims to reduce the waiting time for radiotherapy to minimize the chance of patient–patient contact.

If a healthcare professional becomes infected, the situation becomes even more dangerous. In Korea, patients receiving radiotherapy are in close contact with the therapist. Due to the development of image-guided radiotherapy, doctors often visit the treatment room directly. If the
control room is not independent, infection between therapists can also be a concern. Therefore, if a healthcare professional is diagnosed, the radiation therapist and doctor close to the patient in the treatment room may also require isolation. The department may shut down for 14 days.

Further, treatment duration increases as radiotherapy is discontinued. Increasing the treatment duration adversely affects radiation therapy results. At a time when the intervals between globally affecting epidemics such as severe acute respiratory syndrome in 2002, Middle East respiratory syndrome in 2012, and COVID-19 in 2019 are shortening, we believe strategies for minimizing damage in the future will be needed.

Delaying the initiation of elective radiotherapy as much as possible during the epidemic period, except emergency treatment, is recommended.

1. There is any role for induction chemotherapy it is necessary to consider this treatment option. (Nasopharyngeal carcinoma, NK/T cell lymphoma, small cell lung cancer, etc.)
2. Postoperative radiotherapy can usually be safely postponed until 6 weeks after surgery.
3. In prostate cancer, definitive radiotherapy can be delayed about 3-6 month with androgen deprivation therapy.

Radiation therapists who come into close contact with patients should pay attention to personal protection. Emphasis is placed on wearing personal masks and hand hygiene. In particular, hand hygiene must be strictly enforced every time a patient is treated. To prevent the risk of all facilities being closed, a line must remain between patients and therapists in each treatment room. Efforts should also be made to minimize contact among healthcare professionals. The therapist contact between treatment rooms or visits to treatment room by doctors should be minimized. IGRT should use the online system as actively as possible.

Epidemic prolongation and can no longer result in treatment delays. However, if this occurs, we must prepare a separate treatment room for the infected. The movement, space, and treatment time of the infected person should be separated from general treatment patients. Therapists should wear protective clothing, eyeglasses, and a mask. Considering repeated epidemics, setting up a negative pressure treatment room in large-volume centers may be needed.

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