Letter: The Impact of COVID-19 on the Neurosurgery Department During and After the Lockdown of Wuhan

To the Editor:

When the 2019 novel coronavirus (COVID-19) was first reported in Wuhan (China) last December, and as warned by the World Health Organization (WHO),¹ the Chinese government decided to seal Wuhan city on January 23 to prevent the spread of the virus across the world. On April 8, 2020, China lifted the lockdown of the first Chinese city of Wuhan and Hubei Province, and Wuhan's borders were reopened based on the basically stable epidemic trend and no local infection. It is common knowledge that blockade measures cause delays in seeking medical attention for most patients. In this study, we retrospectively analyzed the attendance conditions in the neurosurgery department of our hospital during and after the lockdown of the city.

In terms of the number of hospitalized patients, we have treated 864 patients who mainly presented with cerebrovascular diseases and brain tumors over the past 6 mo. From the information given in Figure 1, we can see a dramatic change in the number of patients newly admitted from February to July. During the period, there was a dramatic increase from 13 operations in February to 176 operations in July. During this period, the largest number of patients were admitted in June, which might be due to the influx of patients from the surrounding areas or provinces of Wuhan. There are at least 2 fundamental causes accounting for these changes. On one hand, the epidemic situation in Wuhan was worst in February. Since most of the medical resources were reserved for patients with COVID-19, many patients with serious diseases failed to receive timely and effective treatment during the endemic, whereas hospitals in Wuhan accepted only emergency patients. On the other hand, after February, with the remission of the epidemic situation, the number of patients admitted to the hospital increased significantly.

FIGURE 1. Number of newly admitted patients (February–July).

Figure 2 clearly reveals the statistics of comparison in the number of newly admitted patients between preclosure and postclosure of Wuhan. According to the column chart, there was a significant increase in all kinds of diseases. Among them, cerebrovascular disease and brain tumor accounted for 54.6% and 25.5% of the total number of cases, ranking first and second, respectively. During the period of the blockade, we received and cured only emergency cases, including cerebral hemorrhage and life-threatening brain tumors, to reduce the chances of cross-infection. We speculated that the main cause was that the number of patients who could not be hospitalized for treatment during the epidemic period increased continuously, and most of them demanded to be hospitalized for active treatment after the healthcare work had returned to normal.

For operation volume, the line chart (Figure 3) illustrates the growth in surgical operations in our department from February to July. There were a least number of patients in our department in February and March, with only 8 patients undergoing surgery. Among them, most of the surgery cases were related to cerebrovascular disease and brain tumor as cerebral vascular hemorrhage and stroke of brain tumors are emergency cases, which need

immediate surgical treatment. With the effective control of the epidemic situation in Wuhan after March, the number of operations in our department has increased significantly, among which most of the operations were related cerebrovascular diseases and brain tumors. Because these patients could not get medical treatment during the epidemic period, they needed immediate treatment after the epidemic situation had become stable.

According to the above data collected by our department, we found that the number of patients admitted to the neurosurgical department increased significantly during and after the epidemic period, and the number of operations also increased. This also led to an increase in the workload of surgeons. Similarly, for patients, the recurrence rate of some malignant brain tumors with resection before the epidemic situation increased due to no access to conventional chemoradiotherapy.

In conclusion, neurosurgery departments across the world should be prepared for the expected increase in operation volume with the improvement in the epidemic situation and should reasonably prepare the operation schedule and arrange medical resources, so as to seamlessly carry out normal diagnosis and treatment processes after the epidemic situation.

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