COVID-19 in Italy

The study of Zoia et al. provided important insights into the management of patients with the COVID-19 disease discovered in Wuhan and the interpretation of these findings may be enhanced by the following considerations. In Italy since February 2020 spread a massive coronavirus disease (COVID-19) with a great number of infected patients and deaths. To contrast the infection spread in March 2020 in Italy was declared the lockdown and the neurosurgical activity of the Department of Neurosurgery Azienda Ospedaliera Universitaria Ancona was centered on emergency and oncological pathology. In consideration that human coronaviruses could start from the respiratory tract and spread to the central nervous system through transneuronal and hematogenous routes as reported by Desforges M. et al. in 2014, we must assume that also the new COVID-19 might infect the central nervous system too [1) 2)]

In this light, all neurosurgical departments should perform an early diagnosis and correct management of all suspect infected patients to prevent the diffusion of the infection itself to the neurosurgical area [3)]. Firstly the general rule is that all patients transferred from one hospital to another undergo a swab test before the transfer. In nonhospitalized patients admitted to hospital for urgent surgery, a swab test is performed but, because of a long time for its result, when a surgical procedure is urgent a pulmonary CT scan is performed to search for COVID-19 pneumonia. In fact in emergency surgery, a pulmonary CT scan is the only method for a fast potential diagnosis of COVID-19 pneumonia. In COVID19-positive patients, surgery is performed with adequate personnel protections and a dedicated path in the postoperative period.

In the hospital to concentrate resources on the COVID-19 emergency, the non-urgent activities were suspended and each department provided some of its doctors and nurses to reinforce the COVID-19 staff. To face the danger of contagion even in the neurosurgical department, measures have been implemented such as the suspension of all scheduled surgical activity with the exception of class A for oncologic patients, maintenance of neurosurgical emergencies (cerebral hemorrhages, hydrocephalus, tumors with intracranial hypertension, spinal cord compression, and traumatic cranial and spinal), and the urgent neurosurgical visit or the scheduled ones within 10 days. Luckily during this lockdown, the cranial and spinal traumatic pathology decreased dramatically allowing the medical staff to be more available for COVID-19 emergencies. Unexpectedly there was a drop in the request for surgical treatments also for pathologies unrelated to traumatology. While the decline of traumatology is explained by the block of car traffic and work activities, the demand decrease for neurosurgical treatment in spinal degenerative pathology appears incomprehensible. A possible reason could be the widespread fear of the population to go to the hospital seen as a dangerous place for a possible infection. Another potential reason may be the patients' overestimation of their disability and pain with consequent neurosurgical overtreatment. We should investigate if since now we have been surgically treating too many patients who might have been healed by anti-inflammatory drugs and real long rest as is probably occurring now [4)].

Lombardy region

In the Lombardy region in Italy, the following clinical situations have been defined as neurosurgical emergencies:

Cerebral hemorrhages (subarachnoid and intraparenchymal)

Acute hydrocephalus

Tumors at risk of intracranial hypertension

Spinal cord compressions with neurological deficit or at risk of

Traumatic cranial and spinal trauma emergencies [5].

1)
Desforges M, Le Coupanec A, Brison E, Meessen-Pinard M, Talbot PJ (2014) Neuroinvasive and neurotropic human respiratory coronaviruses: potential neurovirulent agents in humans. Adv Exp Med Biol 807:75–96. https://doi.org/10.1007/978-81-322-1777-0_6 Review
2)
Desforges M, Le Coupanec A, Stodola JK, Meessen-Pinard M, Talbot PJ (2014) Human coronaviruses: viral and cellular factors involved in neuroinvasiveness and neuropathogenesis. Virus Res 194:145–158. https://doi.org/10.1016/j.virusres.2014.09.011
3)
Tan YT, Wang JW, Zhao K, Han L, Zhang HQ, Niu HQ, Shu K, Lei T (2020) Preliminary recommendations for surgical practice of neurosurgery department in the central epidemic area of 2019 coronavirus infection. Curr Med Sci. https://doi.org/10.1007/s11596-020- 2173-5
4)
Dobran M, Paracino R, Iacoangeli M. Letter to the editor by Dobran Mauro, Paracino Riccardo, and Iacoangeli Maurizio regarding “Neurosurgery during the COVID-19 pandemic: update from Lombardy, northern Italy.” Zoia C, Bongetta D, Veiceschi P, Cenzato M, Di Meco F, Locatelli D, Boeris D, Fontanella MM. Acta Neurochir (Wien). 2020 Mar 28. doi: 10.1007/s00701-020-04305-w. Acta Neurochir (Wien). 2020 Apr 17. doi: 10.1007/s00701-020-04332-7. [Epub ahead of print] PubMed PMID: 32303838.
5)
Zoia C, Bongetta D, Veiceschi P, Cenzato M, Di Meco F, Locatelli D, Boeris D, Fontanella MM. Neurosurgery during the COVID-19 pandemic: update from Lombardy, northern Italy. Acta Neurochir (Wien). 2020 Mar 28. doi: 10.1007/s00701-020-04305-w. [Epub ahead of print] PubMed PMID: 32222820.