

What are the priorities of pathologists' activities during COVID-19 emergency?

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COVID-19 has urged all sanitary staff in a common effort of solidarity. In Italy, doctors and nurses of all ages, even those not yet entered in or already retired from the National Health System, have answered to the call from hospitals to give their support to face COVID-19 emergency.

The Pathologists community is involved in this crisis as well; thus, we have to consider what our priority activities are in this moment of a dramatic health emergency. First of all, our main duty is to maintain a high level and an optimal turnaround time of routine diagnostic activity. Cancer, as well as other serious diseases, continues to exist and need pathological diagnoses; transplants continue to request our immediate diagnostic support. Technicians, biologists and medical doctors of pathology units have to manage the correct workflow of samples to provide diagnoses in due time. Unfortunately, in our Country pathology staff have begun to be infected as well. For this reason, we must address crucial technical and organizational aspects to contain the biological risk, preserving as much as possible the quality of tissue/cell samples and the health of staff.

The Italian Society of Surgical Pathology and Cytology (Società Italiana di Anatomia Patologica e Citologia - SIAPEC) produced a document on biosafety in surgical pathology in the era of SARS-Cov2 pandemia, published in our journal *Pathologica* ¹. In this document we pointed out that all fresh/inadequately fixed specimens could be potentially infected and we addressed this problem by drawing up specific recommendations. For example, Italian pathologists have been among the first to introduce the under-vacuum and cooling technology for optimal tissue preservation of surgical samples in a formalin-free environment. This technology has the advantage of an adequate control of the so called "cold ischemic" period, but implies that almost all surgical specimens are received fresh in the laboratory and are manipulated and sampled prior to fixation. Given the actual pandemic situation, the biosafety document suggests to suspend this kind of approach and return to conventional formalin fixation, if high-level biosafety conditions cannot be completely assured. The document focuses also on intra-operative diagnoses on frozen samples and on unfixed/inadequately fixed cytological samples (e.g. effusions, bronco-alveolar lavages, etc). It suggests protocols aimed at reducing infectivity risks, while maintaining adequate conservation of morphological and biological features.

Another important concern are autopsies. SIAPEC together with the Scientific Society of Hospital Forensic Medicine of the National Health

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System (COMLAS) produced a document on the management of the corpse with suspect, probable or confirmed COVID-19 respiratory disease ². The document specifies each step and all procedures needed to perform autopsies in safety conditions. The criteria for the definition of cases as COVID-19 suspect, probable or confirmed are the same as those used to evaluate the possible risk of infection in living patients. Our document is in keeping with the CDC ³ and WHO ⁴ criteria, starting from the need of "Airborne Infection Isolation Rooms (AIIRs)" where to perform the autopsies to the appropriate use of personal protection equipment. In the document we highlight that a diagnosis of COVID-19 is based on the detection of the virus on nasal and oropharyngeal swabs with PCR technique, an appropriate clinical picture and on Computerized Tomography (CT) findings of lungs. Therefore, an autopsy with histological examination of tissue samples does not have a primary diagnostic role. If the collection of tissue samples is considered essential for the diagnosis, we propose to use percutaneous core biopsy sampling, albeit with the limits of such procedures performed on corpses.

Post-mortem histopathological findings could play a role in understanding the pathophysiology of the SARS-CoV-2 infection. For this reason, our effort should be to gather the gross and histological findings of autopsies performed in different pathology units around the country to rapidly produce a tissue and data collection useful to define the main causes of death and the various mi-

croscopic alterations induced by SARS-CoV-2.

For autoptic activities, due to the current spread of the disease and the reported false negative rate of naso-pharyngeal swabs, it is mandatory to consider all corpses as potentially infectious. Therefore, all autopsies should be restricted to well-motivated cases and performed in accordance with strict biosafety rules.

In conclusion, we believe that routine diagnostic activities of surgical pathology are a priority, because patients need our diagnoses. At the same time, it is our obligation to safeguard the health of pathology staff by strictly following all biosafety procedures.

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