

EDITORIAL

Thyroid cytology in the times of coronavirus

Before the outbreak of a novel coronavirus-associated acute respiratory disease called coronavirus disease 19 (COVID19), fine needle aspiration (FNA) biopsy was considered “routine” in the initial screening of patients with a thyroid nodule.¹ The role of cytopathologists was clear, deeply rooted in decades of diagnostic practice. Cytopathologists could run the FNA clinic; they could perform not only free-hand sampling of palpable thyroid nodules, but also ultrasound (US) guided aspiration of subclinical lesions; cytopathologists could also determine on-site whether cellularity was adequate to make a diagnosis and triaged diagnostic material to perform ancillary molecular techniques, when microscopy was undetermined.¹

Today, during the COVID 19 outbreak, all these cytopathologist's tasks can less easily be accomplished, as patients attending the FNA clinic may have asymptomatic COVID19.² Moreover, local clinical triage protocols may fail; indeed, the report of a patient prematurely exiting his post travel quarantine period to have an incidental 0.5-cm thyroid nodule evaluated is very worrisome.³ Instead, it should be stated that thyroid FNAs cannot be considered “routine” anymore; while in normal times all patients presenting with a clinically significant thyroid nodule were candidates for FNA, at the time of coronavirus a prioritization policy is needed.⁴ Indeed, since maintaining the physical distance from the patients is not feasible, cytopathologists should wear personal protective masks with a filter respirator and face shields to protect the eyes, staying “close” to the patients only in terms of empathy.⁴ Cytopathologists may be faster by working in pairs, limiting as short as possible the time spent in the FNA clinic by each patient, handling with care potentially infectious fresh specimens in those steps that can lead to aerosol formation and therefore to virus transmission.^{2,4}

In other words, risks should be run only when necessary, considering that most thyroid nodules are asymptomatic and unsuspecting.² Even when malignant not all nodules require urgent diagnosis and management. In fact, thyroid cancer is often indolent and short delays to perform fine needle aspiration (FNA) might be acceptable during a global health emergency.⁴ Thus the recent recommendation to defer FNA biopsy of most asymptomatic thyroid to a later time, when hopefully this procedure will be less risky, is conceivable.^{2,4} Thus, with great reluctance, cytopathologists must choose a delayed diagnosis, as the lesser evil. Ideally, the decision to postpone the FNA should be taken by the multidisciplinary board, based on nodule location, ultrasound features, clinical pathology laboratory data and in particular of serum thyrotropin (TSH) and calcitonin levels.² Since clinical features of metastatic tumors to the thyroid and of primary thyroid cancer may overlap, data on personal history of malignancy are also relevant.² Conversely, cytopathologists play a more central role when

outpatients contact directly the FNA clinic, referred by the general practitioners who reasonably may not be well aware of the updated FNA indications.¹ In these cases it is expected that cytopathologists are able to review the ultrasound examination report distinguishing on the basis of the American Thyroid Association guidelines whether the suspicion for thyroid cancer is very low, low, intermediate or high.⁵ Talking on the phone directly with the patient is also useful to evaluate the personal perception of the potential disease. Since how long this pandemic will last is still uncertain, it is conceivable that a long and still not defined “waiting time” between referral and FNA generates anxiety for patients and in turn a sense of urgency. Contacting the patients offers also the opportunity to exclude fever or other virus related symptoms.

When the decision of performing the FNA is eventually taken, a number the safety issues should be addressed; these have recently been well described.⁶ Briefly, air-dried slides generate aerosols and droplets, that might contain viable and transmissible viruses. Thus, ethanol fixation is safer; toluidine blue rather than Romanowsky staining may be advised. Laboratories performing liquid based cytology should consider that PreservCyt and CytoLyt (Hologic, Inc.) and SurePath (Becton Dickinson, and Company), have low alcohol concentrations and might not adequately inactivate the virus.² Conversely cell block preparation following formalin fixation inactivates the virus potentially present in FNA material. Rapid on site evaluation should be performed only when strictly necessary, preferring immediate methanol fixation rather than smears air-drying for Diff-Quik staining.⁶ All smears should be delivered to the cytopathology laboratory by hand instead of using the hospital tube systems. Considering the above mentioned issue, cytopathologists who perform thyroid FNA should design updated informed consent forms describing the new risks and complications linked to potential virus infection; when the FNA is postponed a written record should be reported mentioning the recommendations issued at the national, hospital, and laboratory levels.

At the time of the writing, new challenges are arising. While aggressive containment measures are currently proving necessary, it is conceivable that in a very near future each country will gradually loosen restrictions, reopen the economy and emerge from the coronavirus lockdown. Similarly, cytopathologists need to design new strategies to make the thyroid cytology practice more and more accessible to patients defending its well-earned reputation of the principal and most effective tool to screen thyroid nodules f cancer.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

Giancarlo Troncone MD, PhD 

Department of Public Health, University of Naples Federico II, Naples,
Italy

Correspondence

Giancarlo Troncone, Department of Public Health, University of
Naples Federico II, Via S. Pansini 5, 80131, Naples, Italy.
Email: giancarlo.troncone@unina.it

ORCID

Giancarlo Troncone  <https://orcid.org/0000-0003-1630-5805>

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