

Effect of COVID-19 restrictions on thyroid cytopathology: delay in the diagnosis of indeterminate lesions

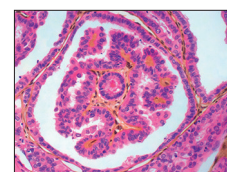


The COVID-19 pandemic has resulted in disastrous effects globally.^{1,2} After the initial outbreak of SARS-CoV-2 in December, 2019, in Wuhan, China, the rapid spread of the virus to other countries forced large-scale social and economic shutdowns. In February, 2020, WHO formally named the disease COVID-19, and confirmed that the virus was a variant of the coronavirus (SARS-CoV) that had previously caused a serious and lethal acute respiratory syndrome (severe acute respiratory virus, known as SARS) in 2002–03.¹ In March, 2020, WHO declared COVID-19 to be a global pandemic, which has been one of the most dramatic public health emergencies in the last century. The pandemic has had profound effects on health care, including disrupted access to patient care (eg, postponed in-person visits), disruption of particular services (eg, screening), economic stress, and workforce and supply shortages. The pandemic also diverted resources away from non-urgent and elective surgical procedures. In particular, this resulted in diagnostic and treatment delays for procedures such as fine needle aspiration cytology (FNAC), which is typically used in the evaluation of thyroid lesions.^{3–6} In a multi-institutional study including 23 countries, Vigliar and colleagues⁴ found that 4 weeks of COVID-19 lockdowns (in the period between March 1 and April 30, 2020) led to a substantial reduction (by 45.3%) in the number of cytology samples, regardless of anatomic site or specimen type, compared with the corresponding periods in 2019. They also found a modest concomitant increase (5.6%) in the rate of non-gynaecological malignancies.⁴

In *The Lancet Diabetes & Endocrinology*, Fabio Medas and colleagues present a multicentre, retrospective study quantifying the reduction in surgical activity for indeterminate thyroid nodules during the COVID-19 pandemic between 2019 and 2021.⁷ The study included 157 surgical centres worldwide, with data collected on 22 974 patients who underwent surgery for indeterminate thyroid nodules. The authors subclassified patients into three groups according to the time of surgery and phases of the COVID-19 pandemic: from Jan 1, 2019, to Feb 29, 2020 (global prepandemic period), from March 1, 2020, to May 31, 2021 (pandemic escalation period), and from June 1 to Dec 31, 2021 (pandemic decrease period).⁷ Of note, they analysed

indeterminate thyroid nodules according to the 2017 Bethesda system for reporting thyroid cytopathology,⁸ which includes class III (atypia of undetermined significance or follicular lesion of undetermined significance) and class IV (follicular neoplasm or suspicious for a follicular neoplasm) categories. Thyroid nodules assigned these classes are associated with a low risk of malignancy and do not require prompt surgical excision, especially during a pandemic. Indeed, Medas and colleagues⁷ highlight a survey in October, 2020, involving 64 experienced surgeons and endocrinologists,⁹ which suggested that in general, patients with Bethesda class III thyroid nodules diagnosed by FNAC should have been followed up with surveillance until the end of the pandemic. For patients with thyroid nodules classified as Bethesda class IV, surgery should have been postponed for only 3–6 months.⁹ As expected, the results presented by Medas and colleagues show that the number of surgeries for indeterminate thyroid nodules significantly decreased during the peak of the pandemic, compared with the prepandemic period. Furthermore, in the decreasing phase of the pandemic, there were significant increases in the occurrence of thyroid tumours larger than 10 mm, lymph node metastases, and risk of recurrence, compared with the prepandemic period. Their findings correlate well with previous studies confirming that reduced surgical activity during the pandemic was associated with more aggressive thyroid cancers than before the pandemic.⁷ Furthermore, the study documented a higher risk of malignancy for indeterminate thyroid nodules (with nearly 40% of patients with indeterminate thyroid nodules having thyroid cancer) compared with that reported in the Bethesda guideline (15–30%).⁸

A major strength of the study by Medas and colleagues is the efforts the researchers invested in collecting results from 157 centres and on a large number of patients, involving 49 countries, and spanning different periods of the pandemic. The large number of patients meant that the volume of indeterminate thyroid nodule cases was similar among the three pandemic periods. However, the investigators did not define the role of concomitant malignancies, chronic diseases, or comorbidities in this heterogeneous population of patients; nor did they delineate differences in lockdown restrictions, responses,



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and health care policies during the pandemic in the different countries involved in the study. The authors also did not acknowledge possible variations in the diagnosis of indeterminate thyroid nodules when applying different classification systems.¹⁰

In conclusion, the study by Medas and colleagues⁷ highlights the increased occurrence of aggressive thyroid cancers in patients with an FNAC-based diagnosis of indeterminate thyroid nodules in many regions of the world after the COVID-19 pandemic, which was likely to be due to reduced surgical activity for thyroid nodules during the pandemic. The lesson learned is that in the event of a new pandemic or another escalation of SARS-CoV-2 infections, surgical procedures for indeterminate thyroid nodules or even suspicious or malignant thyroid lesions should not be postponed, in order to avoid tumour progression and the development of more aggressive cancers.

We declare no competing interests.

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