



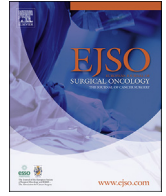
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## Endocrine cancer surgery complicated by COVID-19: Lessons from the initial phase of the outbreak<sup>☆</sup>

**Keywords:**

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*To the Editor*

On March 11, 2020, the World Health Organization declared the outbreak of coronavirus disease 2019 (COVID-19) caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) a global pandemic. The COVID-19 pandemic has overwhelmed health systems around the world, causing many deaths, especially in the USA, South America, and Europe [1–4].

The incubation period of SARS-CoV-2 infection is thought to be less than 14 days, with most cases of COVID-19 developing within 4 or 5 days after exposure. The time from onset to dyspnea is 5 days, 7 days to hospital admission, and 10 days to intensive care unit (ICU) admission. The classical symptoms of COVID-19 are fever, cough, and shortness of breath. Other symptoms include fatigue, myalgia, sore throat, expectoration, headache, nausea, vomiting, and diarrhea. Other unusual symptoms include loss of appetite, anosmia, dysgeusia or ageusia, and conjunctivitis. The severity of COVID-19 ranges from mild acute respiratory illness to severe pneumonia or multiple organ failure. The diagnosis can be confirmed by real-time reverse transcriptase-polymerase chain reaction (RT-PCR) on nasal or pharyngeal swab specimens. Many patients have abnormal findings on chest X-rays (60%) and chest CT scans (over 90%) [1–4].

The first case of COVID-19 in Spain was on January 31, 2020 (a German tourist tested positive for SARS-CoV-2 in the Canary Islands). The first diagnosis in the Iberian Peninsula was on February 25, 2020 (a 36-year-old Italian woman residing in Barcelona who had traveled to Lombardy). As of the end of May 2020, over 235,000 laboratory-confirmed cases had been identified in Spain, 150,000 patients had recovered, and nearly 29,000 had died [1,2].

Three patients who underwent elective endocrine cancer surgery in the first 10 days of March 2020 at our hospital in Girona,

Spain, developed COVID-19 after discharge. The patient characteristics are summarised in Table 1. All three developed unusual symptoms (conjunctivitis, dysgeusia, and loss of appetite) one week after surgery. None presented the classic symptoms of COVID-19 (fever, cough, and dyspnea) or developed pneumonia. None required hospital admission or intensive care; all received only symptomatic treatment. All were confined to their homes. All survived.

The COVID-19 outbreak is a public health emergency. The virus is transmitted from person to person through respiratory secretions, apparently entering the body mainly through the mucosae of the mouth, nose, and eyes. Anesthesiologists, dentists, head and neck surgeons, maxillofacial surgeons, ophthalmologists, and otorhinolaryngologists are at high risk of being infected. Health workers represent between 4% and 20% of the infected population. All healthcare personnel are strongly recommended to wear personal protective equipment, including N95 masks, protective gowns and caps, protective eyewear, and gloves, and all members of the surgical team should be trained in appropriate use of this equipment [1–4].

Although endocrine surgical procedures are generally safe and patients are usually discharged the day after surgery, in light of the risk involved, endocrine surgical procedures should be postponed during COVID-19 outbreaks [1–4]. At our tertiary referral center, all elective surgery was stopped on March 16, 2020 to enable care for patients with COVID-19.

Patients who develop dyspnea or fever in the early postoperative period after cervical endocrine surgery require various diagnostic tests to rule out complications such as hematomas, abscesses, respiratory infections, or pulmonary embolisms. In general, neck and chest CT scans are useful for diagnosing different postoperative complications, which now include COVID-19 pneumonia. Risk factors for poor outcomes of COVID-19 include age >60 years, obesity, malnutrition, diabetes, hypertension, adrenal insufficiency, cardiovascular disease, chronic respiratory disease, immunosuppression, and cancer. A complicated postoperative course is more common in elderly patients with comorbidities (e.g., diabetes, heart disease, or lung disease) [1–4].

Treating endocrine diseases in the context of the COVID-19 pandemic requires a multidisciplinary team including endocrinologists, surgeons, internal medicine specialists, pulmonologists, infectious diseases physicians, and emergency physicians to preserve the health status of people with endocrine conditions and prevent adverse outcomes [1–4].

The lack of universal viral screening in most countries means that it is impossible to know the number of asymptomatic cases of COVID-19; thus, routine screening for COVID-19 is mandatory before elective surgical procedures while the risk remains. Elective

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**Table 1**

Clinical characteristics of 3 patients who developed unusual symptoms of COVID-19 after endocrine cancer surgery.

Variable	Patient 1	Patient 2	Patient 3
Sex	Male	Male	Female
Age, in years	47	42	68
Comorbidities	Obesity (BMI 34 kg/m <sup>2</sup> ), hypertension, chronic renal insufficiency, cerebral stroke	None	Obesity (BMI 31 kg/m <sup>2</sup> ), osteoarthritis
Preoperative RT-PCR	Not done	Not done	Not done
Indication for surgery	Suspected parathyroid carcinoma <sup>a</sup>	Medullary thyroid carcinoma	Follicular thyroid carcinoma
Surgery	Parathyroidectomy	Total thyroidectomy with central and lateral neck dissection	Total thyroidectomy with central neck dissection
Date of surgery	March 2, 2020	March 3, 2020	March 10, 2020
Postoperative complications	No	No	No
Length of hospital stay, 1 in days		2	1
Date of symptoms onset	March 9, 2020	March 10, 2020	March 17, 2020
Presentation	Conjunctivitis	Dysgeusia	Loss of appetite
RT-PCR	Positive	Positive	Positive
Chest X-ray	Normal	Normal	Normal
Chest CT scan	Not done	Not done	Not done
White blood cell count <sup>b</sup>	Normal	Elevated	Normal
Lymphopenia <sup>c</sup>	Absent	Absent	Absent
C-reactive protein	Elevated	Elevated	Elevated
Erythrocyte sedimentation rate	Normal	Normal	Normal
Liver function tests	Normal	Normal	Normal
Admission in hospital	No	No	No
Admission in ICU	No	No	No
Treatment	Symptomatic	None	Symptomatic
Outcome	Survived	Survived	Survived

BMI: body mass index. RT-PCR: real-time reverse transcriptase-polymerase chain reaction test on nasopharyngeal swab specimen.

ICU: intensive care unit.

<sup>a</sup> Suspected parathyroid carcinoma: tumor size 3.4 cm × 2 cm, calcium 16.7 mg/dL, and parathyroid hormone (PTH) 1003 pg/mL.<sup>b</sup> Normal white blood cell count range in healthy adults is between 4000 and 11,000 WBCs per microliter of blood.<sup>c</sup> Normal lymphocyte range in healthy adults is between 1000 and 4800 lymphocytes per microliter of blood.

surgeries should be postponed whenever possible, and procedures for cancer patients should be discussed on a case-by-case basis [1–4].

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## Conflict of interest

The authors declare that they have no conflict of interest.

## Informed consent

Informed consent was obtained from all individual participants included in the study.

## Declaration of competing interest

Dr Rodríguez-Hermosa has nothing to disclose.

Dr Planellas-Giné has nothing to disclose.

Lidia Cornejo has nothing to disclose.

Dr Ranea has nothing to disclose.

Dr Maldonado has nothing to disclose.

Dr Gironès has nothing to disclose.

Dr Codina-Cazador has nothing to disclose.

Nothing to report.

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José Ignacio Rodríguez-Hermosa<sup>a,\*</sup>, Pere Planellas-Giné<sup>b</sup>, Lidia Cornejo<sup>b</sup>, Eloy Maldonado<sup>b</sup>, Alejandro Ranea<sup>a</sup>, Jordi Gironès<sup>a</sup>, Antoni Codina-Cazador<sup>b</sup>

<sup>a</sup> Endocrine Surgery Unit, Department of Surgery, Dr Josep Trueta University Hospital, Girona Biomedical Research Institute (IDIBGI), Department of Medical Sciences, Faculty of Medicine, University of Girona, Girona, Spain

<sup>b</sup> Department of Surgery, Dr Josep Trueta University Hospital, Girona Biomedical Research Institute (IDIBGI), Department of Medical Sciences, Faculty of Medicine, University of Girona, Girona, Spain

\* Corresponding author Department of Surgery, Dr Josep Trueta University Hospital, Avda. França s/n, 17007 Girona, Spain. E-mail addresses: [joserod@eresmas.net](mailto:joserod@eresmas.net) (J.I. Rodríguez-Hermosa), [pereplanellas@hotmail.com](mailto:pereplanellas@hotmail.com) (P. Planellas-Giné), [lidiacornejo23@gmail.com](mailto:lidiacornejo23@gmail.com) (L. Cornejo), [7.maldo.7@gmail.com](mailto:7.maldo.7@gmail.com) (E. Maldonado), [aleranea@hotmail.com](mailto:aleranea@hotmail.com) (A. Ranea), [jgirones.girona.ics@gencat.cat](mailto:jgirones.girona.ics@gencat.cat) (J. Gironès), [acodinac.girona.ics@gencat.cat](mailto:acodinac.girona.ics@gencat.cat) (A. Codina-Cazador).

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