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Original article

Surgery under COVID: An observational study

M. Durand *, H. Mirghani, P. Bonfils, O. Laccourreye

Université Paris Centre, Service d’ORL et de Chirurgie Cervico-Faciale, HEGP, AP–HP, 20–40, Rue Leblanc, 75015 Paris, France

ARTICLE INFO

Keywords:
CoVID-19
Surgery
ENT
Head and neck cancer

ABSTRACT

Aim: To evaluate the surgery program strategy adopted in an adult otorhinolaryngology and head and neck surgery department in an area badly affected by the Covid-19 epidemic peak. The main objective was to analyze the reasons for not cancelling surgeries and the postoperative course of operated patients. The secondary objective was to assess the situation of postponed patients.

Material and Methods: A single-center observational study carried out during the COVID-19 period in France included 124 patients scheduled for surgery during the period March 21–May 20, 2020. The number and nature of operations, both performed and postponed, were reviewed.

Results: A total of 54.0% patients were operated on during the COVID period and 46.0% were postponed. Operations were maintained in urgent or semi-urgent cases. The operated patients did not show any signs of infection during their hospital stay. A total of 29.8% of postponed patients were lost to follow-up and 49.1% were rescheduled.

Conclusion: The application of national and international recommendations minimized the risk of loss of chance for operated patients without increasing the risk of contamination. The postponement of canceled operations resulted in considerable loss to follow-up. Intensified follow-up is necessary for these patients.

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1. Introduction

The novel 2019 coronavirus disease (COVID–19) is a highly contagious zoonosis caused by SARS-CoV-2 with human-to-human transmission by respiratory secretions [1]. The disease broke out in December 2019 in Wuhan, China (https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-time-line?event-0), and went on to become a worldwide pandemic [2]. In France, the first confirmed case was diagnosed late January 2020 [3]. Subsequently, the eastern and Paris regions (Grand-Est and Île-de-France) were the most badly affected (https://www.santepubliquefrance.fr/maladies-et-traumatismes/maladies-et-infections-respiratoires/infection-a-coronavirus/documents/bulletin-national/covid-19-point-epidemiologique-du-21-mai-2020). Infected patients mostly develop a benign respiratory disease but at-risk populations such as the elderly, overweight or cancer patients are exposed to severe clinical forms [4].

Given the rapid spread of the virus, the French authorities asked for all non-urgent surgery to be postponed so as to reserve enough health resources for a massive influx of patients (ARS, COVID–19 prise en charge chirurgicale: https://www.ilededefrance.ars.sante.fr/coronavirus-covid-19-information-aux-professionnels-de-sante). Even so, for pathologies such as cancer that require timely treatment, “minimal” theater access could be conserved in some hospitals to ensure reasonable times to treatment. In this unprecedented situation, several scientific societies (https://www.entnet.org/content/otorhinolaryngologists-and-covid-19-pandemic) and expert groups published guidelines [5–7] to protect patients and care-staff.

The present article assesses the hospital management of patients initially scheduled for surgery during what turned out to be the peak period of the epidemic. The main objective was to analyze reasons for not postponing surgery and assess the postoperative course of patients actually operated on in an adult university ENT and head and neck surgery department. The secondary objective was to assess the situation of postponed patients.

2. Material and Method

This single-center cross-sectional observational study included 124 scheduled patients who were operated on or postponed during the COVID–19 peak, between March 21 and May 20, 2020, in an adult university hospital ENT department in Paris, France. There were no exclusion criteria. Clinical or biological data on
COVID-19 status, patient age, gender, type of surgery, urgency and postoperative course were collected prospectively, and recorded anonymously to respect the rules of data privacy, either retrospectively for March and April or prospectively for May.

Three types of operation were distinguished according to urgency, following Couloigner et al. [6]. Surgical indications and reports were discussed in a departmental meeting for validation. Patients operated on between March 21 and May 20 were contacted by a department physician by telephone 72 and 48 h before surgery to screen for signs of COVID-19 infection: temperature > 38°C, cough, myalgia, anosmia/ageusia, and/or digestive disorder. Patients with positive signs were cancelled and asked to come for a PCR test (Fig. 1). As of April 3, all scheduled patients received a PCR test in the hospital on the eve of surgery. Only patients with negative test results were operated on. No surgeries were performed without PCR results. Patients whose operation was postponed were contacted by the department secretaries and physicians during the 4 months following the study period. After 5 unsuccessful calls, patients were deemed lost to follow-up.

As the present study did not impact treatment, local review board (CERAPHP.5) approval was not required under French law (Act No. 2012-300 of March 5, 2012).

The main aim of the study was to analyze the reasons for maintaining the scheduled surgery and the postoperative course. The secondary objective was to assess the situation of patients whose surgery had been postponed, 4 months after the study period. A descriptive analysis was performed of the reasons for maintaining the scheduled surgery between March 21 and May 20 and of the patients’ COVID-19 status. Secondly, the situation of patients whose surgery had been postponed was analyzed.

Data were entered on an Excel spreadsheet. Three patient groups (operated on as scheduled, postponed and operated on, and postponed and not yet operated on) were compared statistically on criteria of age, gender and benign/malignant status. Pairs of non-matched groups were compared on Student test for quantitative data and on Fisher test for qualitative data. The significance threshold was set at $P < 0.005$ [8,9].

3. Results

A total of 124 patients were included (Fig. 1). 53.8% of surgeries (70/130) were postponed during the study period.

3.1. Reasons for maintaining the scheduled surgery and postoperative course

A total of 88.3% of maintained procedures (53/60) concerned pathologies of urgency level A or B. 44.4% (24/54) concerned cancer;
COVID-19-positive patient was rescheduled at 3 weeks after the original date, in line with current guidelines [12]. He had a cancer of the tongue, which grew progressively during this wait time. When finally admitted, his PCR test was weakly positive; should he have been considered contagious, or was this just a relic of inactive viral genome [13]? Theoretically, this question would require viral culture [14]. After discussion with our virologists, given the resolution of symptoms and the 3-week latency (several studies reporting symptom regression at days 9 to 10 with PCR becoming negative within 11 days [15,16]), this patient was considered cured, and surgery could be performed.

The patient undergoing emergency tracheostomy died 4 days after surgery due to multi-organ failure caused by COVID-19. He showed lung and bone metastases of an oral cavity cancer. The decision to perform tracheostomy in a COVID-positive patient with incurable cancer is debatable. Tracheostomy is now known to incur a high risk of COVID-19 contamination in care-staff [17]. Even so, it seemed unacceptable not to treat this patient, who was suffering from acute laryngeal dyspnea with hypoxemia.

Surgical cancellations in or department during the COVID-19 period seemed to have little impact on the management of head and neck cancer with surgery scheduled during the study period. Apart from 1 patient whose operation was cancelled due to COVID infection and 2 others cancelled for medical reasons, surgeries were performed within 1 month, as recommended in French ENT guidelines [6]. In contrast, the health crisis strongly impacted specialties performing functional surgery, as described by Hervochet et al. [18]. In our adult general ENT department, 56.5% of operations were postponed, and in 59.7% of functional otologic or rhinologic cases in less elderly patients. Even so, some of the postponed patients had pathologies requiring surgery within a month. 69.2% of patients postponed and operated on had group B pathology and were rescheduled during the study period without serious surgical consequences. 29.8% of patients postponed and not operated on during the study period did not get back in touch to reschedule, despite reminders. On the other hand, 49.1% of postponed patients were rescheduled within 4 months of the study period. This delay led to a drop in activity for the department and a post-crisis bottleneck in theater, with delayed scheduling. The aim in coming weeks will be to make sure that patients managed for pathologies requiring prompt surgery are scheduled with short wait times without unduly delaying scheduling for patients who had been postponed.

5. Conclusion

Implementing national and international guidelines allowed adapted management of cancer patients, minimizing loss of chance without increasing the risk of infection. Patients whose surgery was postponed had pathologies that nevertheless required regular monitoring and, in some cases, rescheduling in priority at the end of the health crisis. This reorganization also needs to avoid delaying treatment for new patients with urgency-level A or B pathology.

Funding

None.

Disclosure of interest

The authors declare that they have no competing interest.

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