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COVID-19: Preliminary recommendations from the SFORL

COVID-19 and rhinology, from the consultation room to the operating theatre

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ABSTRACT

The purpose of this article is to give rhinologists advice on how to adapt their standard practice during the COVID-19 pandemic. The main goal of these recommendations is to protect healthcare workers against COVID-19 while continuing to provide emergency care so as to prevent loss of chance for patients. We reviewed our recommendations concerning consultations, medical prescriptions and surgical activity in rhinology.

1. Introduction

The 2020 COVID-19 pandemic has had a huge impact on the treatment of patients in all medical and surgical specialties [1]. Clinical practice should be adapted to protect both patients and healthcare workers. In the face of this unprecedented situation, scientific societies are required to publish recommendations without delay to aid practitioners in their decision-making [2]. The SARS-CoV-2 virus is mostly found in the upper airways, with high viral loads in the nasal cavities and the oral cavity [3]. Any ENT diagnostic or therapeutic procedure therefore carries a risk of spreading the virus and contaminating the healthcare team. This risk seems to be particularly high in the field of rhinology and endoscopic endonasal surgery [4,5]. Clinical examination and invasive procedures on the nasal cavities and connected cavities (sinus, nasopharynx, skull base) expose people to direct transmission of SARS-CoV-2 by inhalation of contaminated droplets or projections to the eyes, or by indirect transmission when touching contaminated hands, surfaces or objects [6].

This article has been written by a college of specialist rhinologists under the aegis of the following French scientific societies:

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the French ENT Society (SFORL), French Rhinology Association (AFR), French ENT College, French ENT National Union (SNORL), and French National Professional ENT Council (CNPORL). Its aim is to help rhinologists adapt their clinical practice. This advice may need to change according to the health situation.

2. Rhinologist consultations during an epidemic

2.1. General information

In rhinology, but also in other ENT sub-specialties, the medical and paramedical staffs are particularly exposed to contamination. Contamination risk is increased during transport for medical reasons therefore we advise that only patients whose treatment cannot be delayed attend for rhinology consultations.

Before confirming the patient's appointment, we recommend that they be contacted by telephone to check that:

- consultation for an urgent physical examination is justified;
- the patient does not have any suspicious signs of COVID-19.

The clinical signs of COVID-19 to look out for are:

- fever ($T^{\circ} > 38\,^{\circ}C$) or feverishness;
- cough;
- chest pain caused by coughing;
- shortness of breath;
- abdominal symptoms;
- headaches;
- anosmia ± ageusia (loss of taste and/or smell) for less than a month;
- high risk of contamination, defined as having been less than a meter away from a COVID-19 positive patient for at least 15 min.

Patients presenting with any of these symptoms should be directed to an emergency department or a specialized centre. The expanded use of teleconsultation or telephone follow-up of patients, especially those for whom a surgical procedure has been postponed or patients with chronic illnesses, should be prioritized during the pandemic.

It is also recommended that appointments have a greater interval between two patients, and that the waiting room should be organized to comply with social distancing measures. Also, any newspapers and magazines that could cause contamination via people's hands should be removed.

2.2. Who to see for a consultation?

According to current recommendations concerning telephone calls or teleconsultations, the following conditions apply and only urgent consultations should be seen face to face. The indications for rhinology consultations have been listed in agreement with the French National Professional ENT Council (CNPORL). They involve any symptoms indicative of life-threatening or functional pathologies for the patient in the near future:

- adult epistaxis (high blood pressure, anticoagulants);
- persistent unilateral nasal obstruction and any suspicion of sinonasal tumour syndrome (after CT-scan or MRI imaging);
- foul-smelling nasal discharge or sinusitis with high risk of serious complications (after CT-scans);
- neuromeningeal or ophthalmological involvement;
- foreign body;
- facial trauma.

2.3. Physical examination

Even asymptomatic patients should be considered as COVID positive. The endonasal physical examination is a high-risk procedure. Nasal endoscopies should therefore only be performed when mandatory because of the potential contamination risk. Regarding protection of healthcare workers, all barrier methods must be implemented. In cases of flexible or rigid nasal endoscopy, we recommend wearing a fluid-resistant surgical mask (FFP2/N95), a single-use disposable fluid-repellent gown, an apron, gloves, headwear and eye protection [7,8]. FFP2 masks have a particle penetration rate of only 6%, and the maximum leakage rate around the face and nose is 8% [9]. In the United Kingdom, some authors even recommend use of an FFP3 mask [10]. FFP3 have a particle penetration rate of only 1%, and the maximum leakage rate around the face and nose is 2%. After use, the flexible or rigid endoscope must be decontaminated immediately in accordance with the protocol currently used in the institution.

The air in the consulting room must routinely be replaced and the room must be thoroughly cleaned after each patient. Specific advice approved by the SFORL has been published for private practices (distancing, hand hygiene, waste management and cleaning, maintenance of premises and equipment) [11]. The physical examination can also be performed in a dedicated consulting room, not the same one as where the patient interview takes place, to avoid contaminating the furniture.

2.4. Medical prescriptions

The main therapeutic issues in rhinology concern the prescription of corticosteroid therapy (intranasal or systemic) and the use of nasal saline washes.

2.4.1. Concerning corticosteroid therapy

Systemic: to date, in agreement with WHO recommendations, systemic corticosteroid therapy is not recommended in COVID-19 patients as it may aggravate ARDS. Newly prescribed rhinology treatments during the pandemic should take into account the specific risks associated with potential presence of coronavirus in the upper airways. Given that the impact of systemic corticosteroids is still uncertain, we advise against this type of treatment, for example in cases of chronic rhinosinusitis with polyps or acute or very painful sinusitis. Conversely, systemic use of antibiotics is still possible, in accordance with the usual recommendations.

Intranasal: no data indicates that the use of local corticosteroids may increase sensitivity to coronavirus. It may even be feared that stopping intranasal corticosteroid therapy in patients would increase their rhinitis symptoms, making it harder to recognize the symptoms of COVID-19, and facilitate the spread of the virus when they sneeze and blow their nose. It is recommended that patients continue to use their regular medication, especially corticosteroids used as a nasal spray or personal inhalers. Intranasal corticosteroids may be newly prescribed if there is no alternative. However, the use of antihistamine sprays and anticholinergic sprays should be preferred whenever possible, as well as oral antihistamines. One exception should be noted: aerosol therapy should be stopped due to the risk of spreading the virus to people in the same room as the patient.

2.4.2. Concerning nasal saline washes

Treatment involving nasal saline wash is a matter of debate, as there could in theory be a risk of spreading the virus to the lungs and upper airways. In the absence of published data on the subject, and taking our cue from similar viral infectious diseases (bronchiolitis, flu), it may be concluded that nasal saline wash is still possible if deemed essential, for example after a surgical procedure.

Table 1
Example of olfactory stimulation exercises to be performed daily in cases of persistent anosmia.

Aroma
Vanilla
Coffee
Dill
Thyme
Cinnamon
Clove
Lavender
Coriander
Light vinegar
Mint
Cumin

Instructions: read the name of the product before smelling it to give the sensory system time to link the two pieces of information. Exercise to be performed daily using labelled jars. Can be purchased from the spice shelf in supermarkets. Other protocols are available.

Precautions are still justified to prevent people around the patient being contaminated. In patients infected by COVID-19, the nasal cavities constitute a "reservoir" with a high concentration of the virus. Treatments using sprays and nasal washes therefore carry a theoretical risk of contaminating other people. Strict hygiene measures should ideally be taken during treatment: washing hands before and after treatment, washing equipment (syringes or devices used for sprays and/or washes) with soap and water and disinfecting it weekly, draining out all the liquid after the nasal wash, and disinfecting soiled surfaces. Treatment should take place when the patient is alone in a room. After completion of the wash and maintenance activities, the room should be left empty for 10 minutes, ventilated as well as possible, without letting anybody in. Ideally, treatment should take place in a room that is only used by the patient, to prevent contamination via surfaces that have not been fully disinfected.

2.5. Specific recommendations

Two pathologies have been the subject to specific recommendations in relation to COVID-19: acute anosmia and epistaxis.

2.5.1. Acute anosmia

A significant proportion of COVID-19 patients (up to 85%) present with anosmia [12]. Anosmia can be the first symptom and can appear before other symptoms such as a cough or fever [13]. Patients presenting with sudden-onset anosmia should be considered highly suspicious of COVID-19.

The SFORL issued a recommendation on how to treat anosmia on 20 March 2020 [14]. Anyone presenting with such a symptom is advised to stay at home and monitor the appearance of any further symptom indicative of COVID-19. In this context, anosmia is only slightly accompanied by a runny nose or blocked nose, or not at all. We do not therefore recommend prescribing nasal saline irrigations in this situation, as it is not indicated and is not recommended to treat anosmia. In the absence of proof of efficacy, we do not recommend prescribing treatment, especially not systemic or intranasal corticosteroids for any presentation involving acute anosmia (loss of smell) or dysgeusia (altered taste) [15]. Acute anosmia's evolution when linked to COVID-19 is often spontaneously favourable. When anosmia persists, we recommend giving the patient a list of olfactory stimulation exercises to be performed daily (Table 1) and directing them to an ENT rhinology department specializing in treatment of olfactory disorders [16].

2.5.2. Epistaxis

There is no published data yet on specific treatment during the COVID-19 outbreak. However, based on proposals from ENT UK [17], a decision-tree has been approved by the SFORL and AFR (Fig. 1). The aim is to reduce the number of hospital admissions for nosebleeds and ensure the safety of healthcare staff and patients.

Note that epistaxis is not a symptom that should lead healthcare professionals to suspect COVID-19. Nonetheless, nosebleeds may occur more frequently in COVID-19+ patients due to their being put on preventive anticoagulation, because of the increased risk of thrombosis in these patients. It is recommended that the patient blow his/her nose and saline irrigations to clear out any clots should be done by the patient if possible, without any staff around to avoid the risk of airborne contamination. Extracorporeal membrane oxygenation (ECMO) with effective anticoagulation can cause nosebleeds. If nasal packing is required, the same level of protection should be used as when performing an endoscopy and absorbable material should be used when possible. Nasal endoscopy is only useful for nosebleeds if a haemorrhagic tumour is suspected. This does not apply to COVID-19+ patients and it induces a very high risk of airborne contamination for the operator. Anticoagulated patients should have a contrast-CT straight away (if the nosebleed persists despite the use of a balloon catheter) with radioembolization as a priority, because endonasal surgery carries a very high risk of contaminating the operating staff: it is not therefore recommended in this situation.

3. The rhinologist in the operative room

3.1. General information

Endonasal surgical procedures are included in the procedures at risk of contaminating surgeons and surrounding staff due to the high viral loads in nasal cavities [3,6]. This risk is aggravated by the use of motor devices such as high speed drills and, possibly, microdebriders [5]. The surgical indications should therefore be limited to the urgent procedures listed in the paragraph below.

3.2. Surgical indications

Endonasal surgical procedures can be categorized into 3 groups relating to the degree of urgency and are listed in Table 2. This table illustrates the pathologies to be graded according to their severity, but is not exhaustive:

- surgery not to be postponed;
- surgical to be postponed for up to four week without any significant impact on prognosis;
- surgery which can be postponed for a minimum of 6 to 8 weeks without significant prognostic impact.

All surgeries in groups B and C must therefore be postponed during the phase where the pandemic is spreading. Postponing treatment of a COVID-19+ patient in groups B or C will first and foremost allow patients to heal and their COVID-19 status to become negative again.

3.3. COVID-19 protocol

Some teams use a "COVID-19 protocol" approved by the French Infection Control Committee:

3.3.1. Prior to hospitalization

The patient is contacted by telephone 48 h before admission to the hospital, to conduct the COVID-19 interview (recorded in the patient's medical file) and ensure there are no suspicious symptoms.

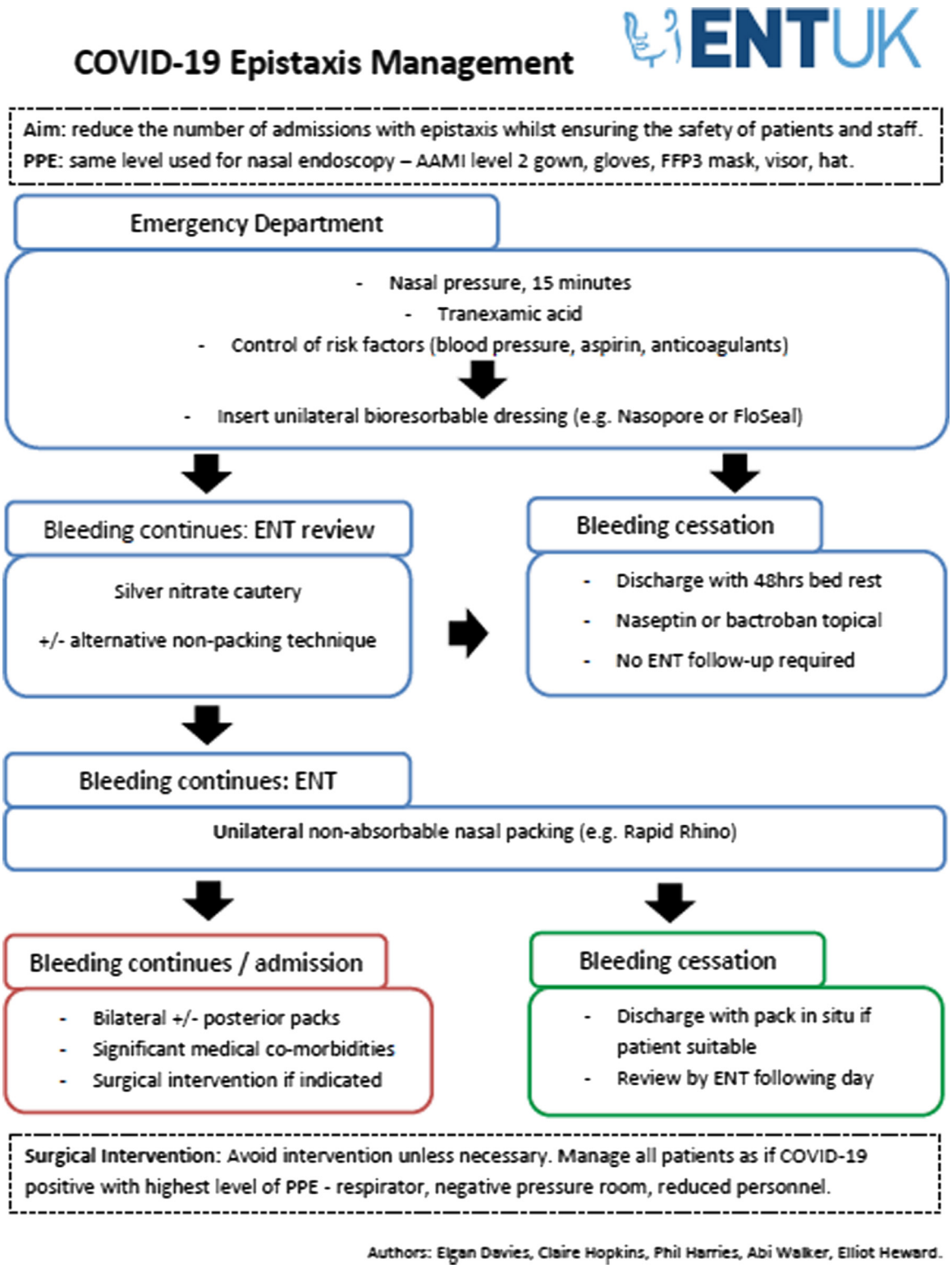

Fig. 1. Epistaxis management decision-tree proposed by ENTUK (https://www.entuk.org/sites/default/files/COVID%2019%20Epistaxis%20Management.pdf) and approved by the French Rhinology Association (AFR).

3.3.2. During hospitalization

Patient admission 24 to 48 h before the date of the surgery. On their arrival, a member of the medical or paramedical staff conducts the COVID-19 interview. A nasal swab for COVID-19 RT-PCR and a low-dose chest CT-scan should ideally be performed so that the patient's COVID-19 status may be determined (except in cases of extreme emergency). PCR tests have a non-negligible false negative rate and are not sufficient, on their own, to define the patient's COVID-19 status [18]. If the patients present with suspicious symptoms, even in cases of negative PCR, surgery should be postponed for 15 days or longer if possible. The patient must then be tested again before rescheduling.

Table 2
Classification of endonasal surgery indications: best practice advice in relation to the COVID-19 pandemic.

Endonasal surgery		
Group	Pathology or type of procedure	Recommended approach
Group A		
Surgery that cannot be postponed	Sinusitis with complications (cavernous sinus thrombophlebitis, neuromeningeal damage) or on fragile terrain Invasive fungal sinusitis Complicated mucocele (neurological or ophthalmic signs) Very displaced nasal fracture, foreign body in the nasal cavity Nosebleed not controlled by a balloon catheter when radioembolization is not possible Sinus and nasal cavity cancers Osteo-meningeal defects[a]	Emergency treatment
Group B		
Risk of prognostic impact if treatment delayed for more than a month	Inverted papillomas	Postpone surgery
	Fungal sinusitis in immunodeficient patients	Reassess the patient after 1 month and adapt the treatment programme according to the course of the disease and the spread of the COVID-19 pandemic
	Mucocele without compression Osteo-meningeal defects[a]	
Group C		
Surgery which can be postponed for a minimum of 6 to 8 weeks without significant prognostic impact	CRSwNP	Postpone surgery
	Sinus aspergilloma, oro-antral fistula	Reassess the patient after 6 to 8 weeks and adapt the treatment programme according to the course of the disease and the spread of the COVID-19 pandemic
	Benign lesion to be removed via endonasal approach Rhinoseptoplasty Dacryocystorhinostomy via endonasal approach	

CRSwNP: chronic nasal sinusitis with nasal polyps. Non-exhaustive list.
[a] Degree of urgency to be discussed on a case-by-case basis.

3.3.3. In the operating theatre

Dedicated COVID-19 operating theatres should be identified [19]. The operating room should, at least, have negative pressure airflow in order to reduce the risk of spreading the virus [20]. Adapted anaesthesia protocols (closed-circuit ventilation) may be proposed to reduce the risk of contaminating the medical and paramedical staff [8]. During procedures on a patient with COVID-19+ status or unknown COVID-19 status, the number of healthcare workers in the room should be reduced to the strict minimum. These healthcare workers must routinely protect themselves by wearing a surgical gown or coveralls, a FFP2 mask, protective goggles, gloves and two caps. The gown or coveralls, gloves, FFP2 mask and outer cap should be removed in the room where the procedure or treatment has taken place and should be disposed of in line with procedures for handling Infectious Medical Waste (IMW). It is also possible use a transparent cover over the patient, to minimize the spread of the virus due to leakage from the endotracheal tube. In cases of endonasal surgery that cannot be postponed on a COVID-19+ patient, it is recommended that, if possible, surgeons should use special powered air-purifying respirator (PAPR) protective equipment [21].

Concerning surgical techniques, it is recommended that alternatives to the endonasal approach be prioritized if the use of motorized equipment can thus be avoided (external paracanthal, paralateronasal, sublabial approach). High speed drills are especially known to increase the risk of aerosolization or spray from tissue micro-fragments contaminated by the virus [5]. In cases of nasosinusal cancer surgery where drilling is necessary (opening of the anterior skull base for example), the endonasal approach should still be preferred.

3.4. Decision-tree

Different situations can therefore be identified according to the risk and to the patient's COVID-19 status:

- group A and COVID-19 positive patient: COVID-19 protocol;
- group A and COVID-19 status unknown: COVID-19 protocol;
- group A and COVID-19 negative patient (interview, PCR and negative scan): patient operated on in a conventional sector;
- group B or C, irrespective of COVID-19 status: surgery postponed. Group B should be prioritized over group C once rescheduling is possible, after all patients in group A have been treated.

4. Conclusion

These precautions and recommendations during this particular period of the pandemic should be adapted in the future to any new scientific data and to the national and international situation.

Disclosure of interest

The authors declare that they have no competing interest.

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