Correspondence

Intubation of COVID patients: always a risky business?

We thank El-Boghdadly et al. for their article reporting the incidence of coronavirus disease 2019 (COVID-19) in healthcare workers following tracheal intubation [1]. Their study found a 10.7% incidence of COVID-19 following tracheal intubation in patients with confirmed or suspected COVID-19. During the same period, we conducted a prospective service evaluation at our institution to assess laryngoscopists' risk of COVID-19 acquisition. Our findings differed from those of El-Boghdadly et al. and so we present a summary of our service evaluation and a rationale for the differences.

The service evaluation was registered with Imperial College Healthcare NHS Trust and data were collected prospectively from 11 March to 30 April 2020. Inclusion criteria were: patient age > 18 years; absence of a negative COVID-19 ribonucleic acid polymerase chain reaction (RNA-PCR) test; and tracheal intubation for any indication. Following tracheal intubation, a questionnaire was completed detailing the indication, COVID-19 status of the patient and the availability and usage of personal protective equipment (PPE). Questionnaire completion was mandatory. COVID-19 status was classified as 'confirmed' (RNA-PCR test positive), 'suspected' (fever or new persistent cough, no RNA-PCR test) or 'unable to exclude' (no fever or cough, no RNA-PCR test). Clinical data were extracted retrospectively from the electronic patient record. Laryngoscopist health 5, 10 and 14 days post-intubation was obtained from the electronic staff rota, and categorised as 'healthy, at work', 'healthy, self-isolating' (due to a household member with symptoms of COVID-19) or 'sick, off work'.

The first death in London from COVID-19 occurred on 12 March 2020 at our institution [2]. This, in addition to the deficiency in local stocks, spurred the development of a steering group to establish resilient supply chains for World Health Organization (WHO) standard PPE [3]. By 17 March, we had independently sourced PPE, including reusable respirators and visors and, by 24 March, had formalised infection control, cleaning protocols and training.

Seventy-two patients' tracheas were intubated during the data collection period. The most common indications were hypoxia (n = 34; 47%) and surgical operations (n = 20; 28%). A total of 24 (33%) intubations were performed in the emergency department, 20 (28%) on a general ward, 14 (19%) in the intensive care unit and 14 (19%) in an operating theatre. Patients' COVID-19 status and laryngoscopists' health are reported in Table 1. WHO standard PPE was available for all intubations and was used in 70 (97%) cases.

The absence of laryngoscopist illness in our service evaluation differs from the 10.7% incidence reported by El-Boghdadly et al. [1]. The potential reasons for this difference are: improved availability of PPE; reduced risk of selection bias; and a shorter follow-up period. El-Boghdadly et al. reported use of WHO standard PPE [3] in only 87.9% of

Table 1 Patient COVID status and laryngoscopist health post-intubation. Values are number (proportion).

Parameter			
Patient COVID status at the time of intubation	n = 72		
Confirmed	22 (31%)		
Suspected	32 (44%)		
Unable to exclude	18 (25%)		
Patient COVID RNA-PCR status*	n = 72		
Positive	48 (67%)		
Negative	17 (24%)		
Not tested	7 (10%)		
Laryngoscopist health post intubation	*Day 5*	*Day 10*	*Day 14*
Healthy, at work	68 (94%)	68 (94%)	69 (96%)
Healthy, self-isolating	4 (6%)	4 (6%)	3 (4%)
Sick, off work	0 (0%)	0 (0%)	0 (0%)

*The result of the RNA-PCR test was not always known at the time of intubation.

cases and the level of training in the use of PPE is not reported [1]. A risk of the non-mandatory self-reporting method of El-Boghdadly et al. is the potential for reporting bias; that is, laryngoscopists who developed symptoms might have been more likely to self-report, leading to an overestimation of the incidence. In 99% of cases, the incubation period for COVID-19 is 14 days or less [4]. The use of a longer follow-up period by El-Boghdadly et al. (40 days) [1] may also have led to an overestimation, due to unrelated acquisition of COVID-19.

In summary, El-Boghdadly et al. highlight the potential risk of intubating COVID-19 patients, whereas our service evaluation demonstrates that effective procurement, usage and decontamination of WHO standard PPE can reduce this risk. If elective surgery is to be re-established whereas COVID-19 is prevalent, the focus on effective PPE must be maintained in order to minimise the risk of COVID-19 transmission to healthcare workers.

C. J. Mullington
P. Shetty
J. Dalton

Imperial College Healthcare NHS Trust,
London, UK
Email: c.mullington@imperial.ac.uk

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