prevalence of 'second victim' experiences and its impact on professional careers in anaesthesiology.

An online survey with 41 questions was sent to members with valid e-mail addresses (3293 members) of the Difficult Airway Society (DAS), the Society for Airway Management (SAM), and the European Airway Management Society (EAMS). The survey was conducted between February 1 and April 1, 2019, with two reminders sent later. We received 721 complete responses (22%). The respondents provided written informed consent to coded data analysis. Questions asked for demographic information, professional experience, experience with airway crises and the impact on personal well-being, job performance, legal sequels, and patient outcome.

Survey participants, whose mean (standard deviation) age was 47 (12) yr, were 62% male, 93% anaesthesiologists with 20 (10) yr of experience (13 [9] yr focusing on airway management), and 7% were in training. Airway experts were identified in 47%, and routine airway providers in 47% of the respondents. Interest in airway management was triggered in 49% by a difficult case, in 29% by research, in 45% by an educational event, and in 62% by a colleague (multiple answers were allowed). Although 89% were involved in an airway crisis, only 23% considered themselves to be a 'second victim'. Only 38% participated in a debriefing, and in 19% changes at the departmental level were instituted. Symptoms reported by second victims are displayed in Table 4. Symptoms persisted in 26% up to weeks, in 8% for half a year, in 5% for >1 yr, and in 5% they still persist. Acquiring advanced airway expertise served as a coping mechanism in 72% of those considered to be a second victim, 33% became airway educators, and 65% went into advanced airway management training. After the adverse experience, 29% changed nothing, 48% changed airway management strategies, 9% airway teaching, and 8% equipment. Patient outcomes were 51% without sequela, 20% with minor and 2% with major morbidity, 17% with death; and 4% resulted in litigation. Location was operating room (OR; 65%), emergency room (ER; 10%), and ICU (11%); 56% during the weekday, 5% on weekends.

This survey has shown that more than a fifth of airway events result in anaesthesiologists as second victims with substantial impact on their own well-being. Relieving factors included proper debriefing, support by colleagues and staff, advanced airway teaching, and skill acquisition to become an airway expert.

Table 4 Experience of second victim symptoms

Experienced symptoms	Self-reported second victim n=113; n (%)
Anxiety, fear	80 (71)
Sadness, guilty	45 (40)
Lack of confidence	43 (38)
Stress	39 (35)
Sleep disorders	30 (27)
Flashbacks	22 (19)
Learning opportunity	17 (15)
Relief	10 (09)

Elective tracheostomy *versus* delayed extubation for postoperative airway management after major head and neck oncologic surgery

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Tracheostomy has been used traditionally to provide secure airway in patients after radical head and neck cancer (HNC) surgery. However, recent studies have questioned these practices, and delayed tracheal extubation may be equally safe.[1 2] We planned a study to determine the safety and efficacy of overnight intubation followed by extubation the next morning (delayed extubation strategy [DES]) compared with elective tracheostomy (ETR) for postoperative airway management and to identify factors that were associated with performance of an ETR.[3]

A prospective observational study approved by the Institutional Ethics Committee was conducted between August 2015 and July 2016. Adult patients undergoing elective major oropharyngeal resection for HNC under general anaesthesia with tracheal intubation were included. The decision regarding postoperative airway management using either ETR or DES was made by the operating surgeon and anaesthetist according to usual practice. Extent of the disease, type of surgery, demographic details, and anaesthesia and airway management details were recorded. Time to extubation (in the DES group), time to oral intake and speech, complications until discharge, and length of hospital stay were recorded.

A total of 4477 patients were screened, and 714 were included. DES was performed in 417 patients (58.4%) and ETR in 303 patients (42.4%). DES was associated with a significantly shorter stay in hospital (7.2 [3.7] *vs* 11.5 [7.2] days, P=0.00), less time to oral intake (5.1 [1.6] *vs* 7.2 [2.8] days, P= 0.00), and less time to speech (3.6 [1.6] *vs* 6.1 [2.7] days, P=0.00). Overall complications (4.3% *vs* 22.5%, P=0.00) and airway related complications (1.7% *vs* 8.7%, P=0.00) were significantly lower in the DES group compared with ETR. On multivariate analysis, T3–T4 tumour stage (odds ratio [OR]=10.2; 95% confidence interval [CI], 5.2–20.3), preoperative radiotherapy (OR=3.9; 95% CI, 1.4–10.5), bilateral neck dissection (OR=2.6; 95% CI, 1.0–6.6), reconstruction with a composite flap with or without bone (OR=2.5; 95% CI, 1.5–4.2) and duration of anaesthesia (OR=1.006; 95% CI, 1.004–1.008) were independent predictors of ETR.

After major intraoral HNC surgery, a DES is safe with fewer complications and faster return to oral feeding and speech. Tracheostomy may be performed in selected patients with T3–T4 tumours, composite flaps, bilateral neck dissection, or those receiving prior radiotherapy.

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National electronic difficult airway database and Alert Card: a UK experience

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The incidence of difficult intubation varies between 1% and 18% during a general anaesthesia.[1] A history of previous difficult intubation is regarded as the single most important predictor of subsequent difficult laryngoscopy and intubation.[2] Airway societies around the world recommend that the anaesthetist should communicate any difficulty encountered in airway management to the patient and the primary caregiver soon after the event. Despite the recognised benefits of this timely communication, this information is neither standardised nor consistent.[3] We are not aware of any other well-established national, secure, electronic difficult airway database for adult patients anywhere in the world that is accessible anytime of the day.

The Difficult Airway Society UK (DAS) ran a pilot project for 24 months to ascertain the feasibility of such a database. The interested hospitals were registered to the project through a local lead, who obtained local information governance approval. Data were submitted through a secure online form on the DAS website, after taking explicit consent from the patients. Submitted clinical data were stored anonymously on an International Organization for Standardization certified server based in the UK, and any patient identifiable information was forwarded as an encrypted message to an offline computer kept at a NHS premise. DAS sent an alert card with a unique code, which can be used to access data from the website 24/7 by doctors registered to the DAS website or are on the GMC register.

We received 230 submissions from 24 hospitals during the pilot period. The collected data included the type of event, patient characteristics, time of the procedure, grade of primary anaesthetist, and the rescue airway management method amongst other details. At the end of the pilot, we conducted a survey of the leads and their experience and suggestions were incorporated in the main project launched in November 2018. Currently the project caters for 79 hospitals across the country, and many more are in the process of joining.

Our experience suggests that it is feasible to provide a secure, national, online difficult airway database that is accessible at any time of the day. The users, both patients and the anaesthetists, have reported it to be a very useful safety initiative.

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Face-to-face videolaryngoscopy-assisted tracheal intubation: does the hand matter?

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Awake videolaryngoscopy is an evolving option for difficult airway management[1]. Awake videolaryngoscopy-assisted tracheal intubation (VATI) performed face to face with the patient has two crucial consequences for the operator. Firstly, if the videolaryngoscope (VS) is held in the operator's left hand (the traditional hand used to hold the handle), directing the tracheal tube (TT) with the right hand will involve a crossover of their arms. Secondly, the glottis view and the direction the tube will be manipulated is altered because of the 180° view rotation. Here we describe our investigation into the effect of the operator holding the VS in their left or right hand and directing a TT with their other hand.

Anaesthetist volunteers were asked to perform face-to-face VATI on a mannikin. The times to the glottis view and the TT passing through the vocal cords were recorded. Each participant performed the procedure twice – holding the VS and directing the TT with alternate hands. Participants were asked to rate their perceived ease of tracheal intubation for both attempts.

Table 5 Times to glottis view and tracheal tube through cords and perceived ease of videolaryngoscopy-assisted face-to-face tracheal intubation on a manikin.

	Attempt 1		Attempt 2	
Hand holding videolaryngoscope (*n*)	Left (15)	Right (8)	Left (8)	Right (15)
Mean (range) time to glottic view (s)	12 (4–35)	26 (8–102)	11 (3–25)	6 (2–10)
Mean (range) time to tube through cords (s)	42 (8–118)	45 (10–156)	20 (6–41)	50 (16–125)
Tracheal intubation in <60 s, % (*n*)	80 (12)	75 (6)	100 (8)	87 (13)
Tracheal intubation in >60 s, % (*n*)	20 (3)	25 (2)	0 (0)	13 (2)
Participant perception of procedure as easy or neutral, % (*n*)	47 (7)	63 (5)	100 (8)	60 (9)
Participant perception of procedure as difficult, % (*n*)	53 (8)	37 (3)	0 (0)	40 (6)

n, number of participants.