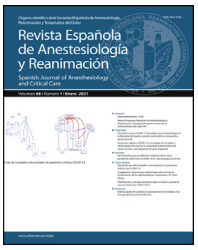
Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Revista Española de Anestesiología y Reanimación 69 (2022) 310–314

Revista Española de Anestesiología y Reanimación

www.elsevier.es/redar



LETTER TO THE DIRECTOR

The human factor in critical decision making☆

El factor humano en el proceso de toma de decisiones críticas

To the Editor:

Anaesthesiology is a specialty that has grown in popularity over the previous year due to the COVID-19 pandemic. Anaesthesia management in critical situations during the pandemic has showcased the flexibility of anaesthesiologists and also, perhaps, our little-known medical and human skills[1]. Managing critical scenarios is challenging. Our development as clinicians able to work in any type of critical situation (pre- and intra-hospital) has been guided by scientific evidence and training. However, what happens when we have to deal with a hitherto unknown clinical problem? What happens when the number of intubated patients increases exponentially and ultimately exceeds the resources of the healthcare system? Our intention in this letter is to describe how the human factor can influence our decision-making process in critical scenarios.

During the first wave of the pandemic, a 70-year-old woman was admitted to the intensive care unit due to bilateral SARS-CoV-2 pneumonia that required immediate oral intubation and pronation. Nine days later, we performed blind percutaneous tracheotomy. Due to fear of infection and uncertainties at that time regarding the infectiousness of the virus, the procedure was not guided by fibreoptic bronchoscopy in order to avoid exposing the operators to the virus in an open airway. Several hours later, the patient presented thoracic and cervical subcutaneous emphysema with progressive desaturation, and was diagnosed with bilateral pneumothorax. Fibreoptic bronchoscopy revealed a tear in the *pars membranosa* and dissection of the pre-oesophageal space about 5 cm above the carina. Ventilation and respiratory parameters improved after the cannula had been replaced with a reinforced tube. Surgical repair was ruled out due to the patient's age and the severity of her clinical condition, and she ultimately died due to respiratory complications 15 days after admission.

COVID-19 patients typically require prolonged weaning from mechanical ventilation, often requiring tracheotomy. In patients with COVID-19, this technique is particularly challenging to clinicians as it is an aerosol-generating procedure that can put them at risk of infection. Studies published so far have observed no difference between the percutaneous and surgical approach in terms of timing or infection of healthcare workers[2]. Measures such as changing the ventilation mode from mechanical to spontaneous, administering muscle relaxants, or using closed suction systems to seal the bronchoscope can help reduce the spread of the virus[3–7]. Percutaneous tracheostomy is usually performed under fibreoptic bronchoscopy to guide insertion of the needle and ensure that the posterior wall of the trachea is not injured during dilation.

The COVID-19 pandemic has given us an opportunity to show our strengths and weaknesses, and we have encountered many cases such as the one reported here, although we usually prefer not to share them. We usually work following guidelines, but what happens when cannot rely on our training to guide our actions, and our work involves not only a risk for our patients, but also for ourselves? Can we act appropriately when we are forced to work under circumstances that have not been foreseen or rehearsed in even the worst contingency plans? At the beginning of the pandemic, the need to react rapidly to ever increasing healthcare demands forced us to rely on evidence from isolated case reports, small patient series, and/or low-quality studies. During the pandemic, our decision-making processes were undermined by the relentless pressure of caring for so many patients, by our own fears and instinct for self-preservation, and decades of evidence-based medicine were swept away and replaced by emergency-based medicine. Lack of evidence forms the basis of cognitive bias[8]. Lack of evidence is the context, the setting; we act with this setting, and are therefore compelled to make decisions. Fear is an emotional reaction to our surroundings that strengthens our convictions and modifies our choices.

The COVID-19 pandemic has revealed how emotions can influence the decision-making process: fear leads to irrational thinking and misjudgement. Continuing education must be prioritized to prevent mistakes from being repeated. The safety of both patients and clinicians is mandatory; therefore, standard operating procedures should be followed in any emergency setting. COVID-19 has shown how cognitive bias makes us behave irrationally in an emergency situation, and that fear must always be taken into account in critical decision making.

Authors/collaborators

RB: supervised the data collection, took part in writing and preparing the manuscript.

☆ Please cite this article as: Blasco Mariño R, Clau Terré F, Landucci F, Biarnes-Suñé A. El factor humano en el proceso de toma de decisiones críticas. Rev Esp Anestesiol Reanim. 2022;69:310–311.

FC: contributed significantly to the revision and design of the manuscript.

FL: contributed significantly to the revision and design of the manuscript.

AB: supervised the data collection, took part in writing and preparing the manuscript.

All authors have reviewed and approved the final document.

References

1. Ferrando C, Colomina MJ, Errando CL, Llau JV. Anesthesiology and the Anesthesiologists at COVID-19. Rev Esp Anestesiol Reanim. 2020;67:289–91.
2. Mattioli F, Fermi M, Ghirelli M, Molteni G, Sgarbi N, Bertellini E, et al. Tracheostomy in the COVID-19 pandemic. Eur Arch Otorhinolaryngol. 2020;277:2133–5.
3. Villalonga Vadell R, Martín Delgado MC, Avilés-Jurado FX, Álvarez Escudero J, Aldecoa Álvarez-Santuyano C, de Haro López C, et al. Consensus Document of the Spanish Society of Intensive and Critical Care Medicine and Coronary Units (SEMICYUC), the Spanish Society of Otorhinolaryngology and Head and Neck Surgery (SEORL-CCC) and the Spanish Society of Anesthesiology and Resuscitation (SEDAR) on Tracheotomy in Patients with COVID-19 Infection. Rev Esp Anestesiol Reanim. 2020;67:504–10.
4. McGrath BA, Brenner MJ, Warrillow SJ. Tracheostomy for COVID-19: business as usual? Br J Anaesth. 2020 [published online ahead of print, 2020 Sep 3]. S0007-0912(20)30730-3.
5. Cook TM, El-Boghdadly K, McGuire B, McNarry AF, Patel A, Higgs A. Consensus guidelines for managing the airway in patients with COVID-19: Guidelines from the Difficult Airway Society, the Association of Anaesthetists the Intensive Care Society, the Faculty of Intensive Care Medicine and the Royal College of Anaesthetists. Anaesthesia. 2020;75:785–99.
6. Al Yaghchi C, Ferguson C, Sandhu G. Percutaneous tracheostomy in patients with COVID-19: sealing the bronchoscope with an in-line suction sheath. Br J Anaesth. 2020;125:e185–6.
7. Takhar A, Walker A, Tricklebank S, Wyncoll D, Hart N, Jacob T, et al. Recommendation of a practical guideline for safe tracheostomy during the COVID-19 pandemic. Eur Arch Otorhinolaryngol. 2020;277:2173–84.
8. Landucci F, Lamperti M. A pandemic of cognitive bias. Intensive Care Med. 2020:1–2.

R. Blasco Mariño[a,*], F. Clau Terré[a,b], F. Landucci[c], A. Biarnes-Suñé[a]

[a] *Servicio de Anestesiología, Reanimación y Tratamiento del Dolor, Hospital Universitario Vall d'Hebrón, Barcelona, Spain*

[b] *Instituto de Recerca Vall d'Hebron (VHIR)*

[c] *Servicio de Anestesiología y Cuidados Críticos, Hospital San Giovanni di Dio, Florencia, Italy*

* Corresponding author.

E-mail address: rblasco@vhebron.net (R. Blasco Mariño).

https://doi.org/10.1016/j.redare.2021.05.008

2341-1929/

Spinal fracture secondary to resuscitation procedures. Clinical and medicolegal issues☆

Fractura espinal secundaria a maniobras de resucitación. Implicaciones clínicas y medicolegales

To the Editor:

Spinal fractures associated with cardiopulmonary resuscitation (CPR) are interesting in both clinical and forensic medicine. Such fractures can be caused, or aggravated, by ankylosing spondylitis; hence the importance of this condition in the context of CPR.

Our patient was a 78-year old man. History: schizoaffective disorder, mild cognitive impairment and Parkinson's disease.

He was found sitting on the floor between the washbasin and the bathtub, leaning against the bathtub, unconscious, cyanotic and without a pulse. The electrocardiogram (ECG) showed pulseless electrical activity. CPR was performed per protocol, including cardiac massage, but the patient remained in asystole. Death was declared after 30 min of resuscitation.

The autopsy showed: External examination: precordial leathery plaque, suggestive of chest compression manoeuvres. Skin wounds compatible with intracardiac punctures (Fig. 1). Fracture of 3rd to 5th left anterior costal arch and fracture of the sternal manubrium. Internal examination: Haemorrhagic suffusions on the medial side of the rib cage at various levels. Bilateral haemothorax (100 cc). Transverse fracture line between T8 and T9, which crosses the intervertebral disc space and continues backwards, to the right and slightly upwards. Spinal fusion or ''bamboo spine''. Ossification of the anterior longitudinal ligament (ALL) extending along the dorsal spine. Infiltration of blood in the epidural space (5.5 cm above the fracture). The spinal cord is unremarkable. Vertebral haemangioma at D7 (Fig. 1d, e).

The post mortem radiograph showed syndesmophytes anterior to the vertebrae, with extensive, symmetrical bone bridges (vertebral ankylosis). Vertebral body squaring due to sclerosis of the anterior margins secondary to previous marginal erosions (Romanus lesions) and ALL ossification (Fig. 1). Extensive histopathology, including autopsy of the heart and other organs, as well as toxicology, showed no abnormal findings. Death was classified as natural, primarily of cardiac origin (possible asystole due to bioelectrical phenomena), secondary fall without injuries, and spinal fracture caused by CPR.

☆ Please cite this article as: Dorado Fernández E, Sebastián Sebastián C, Aso Vizán A, Aso Escario J. Fractura espinal secundaria a maniobras de resucitación. Implicaciones clínicas y medicolegales, Rev Esp Anestesiol Reanim. 2022;69:311–313.