Editorial

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Malpractice in anesthesiology

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When everything goes well in the practice of medicine, you are an extraordinary doctor, a successful professional, a great person. But when something bad happens – and be certain that in our profession this risk is there, every day –, then you are very much on your own, your best physician friends involved in the incident can become your worst enemies, and ruin your life. The first time we make a mistake or have an unexpected incident with irreparable damage to our patient, their family, or friends we can overcome this event and return to our professional practice with relative easiness, with a positive change of attitude in each case, in each procedure, by a scientific analysis of what happened, and above all; with the acceptance that we did something wrong. Practicing medicine is wonderful but not easy, and we should not pigeonhole ourselves into the statement that *«to err is human»,*[1] because failures are dangerous and unacceptable.

From the time of ether, curare, cocaine and other beginnings of our specialty to the most recent advances in this century; from pioneers such as Morton, Snow, Simpson, Lundy, Bier and many more, to artificial intelligence, anesthesiology has evolved at a gigantesque pace; advances that no anesthesiologist, no matter how brilliant she or he may be, does not have the intellectual capacity to be 100% up-to-date. However, as anesthesiologists we have the obligation to provide our professional care to all types of patients, from the non-born to elderly people with pathologies as diverse and varied as the stars in the sky. Fortunately, for several decades now, anesthesiology has been divided into several subspecialties, thus reducing the need to know such different fields. Nonetheless, in remote places, in geographical areas with fewer resources, or in urgent or special situations, it is necessary to intervene as anesthesiologists at the cost of making mistakes fighting to save lives.

Anesthesiology has always been a specialty of which the vast majority of our patients have an unprecedented fear. No matter how much information we give them during the pre-anesthetic evaluation, they are usually concerned about the side effects of our techniques more than the risks of surgery. The information available on the internet, unfortunate cases on social networks, and other communication media that describe complications of all kinds including awareness under general anesthesia, surgical pain, or unexpected death in the perioperative period are just some of the unfortunate events that favors anxiety and fear -justified or not-, of people who require anesthesia for surgical or diagnostic procedures.[2-4]

On the other hand, the mistakes that we make as health workers, especially doctors and nurses who work in the operating room, in the Intensive Care Unit and/or in the Emergency Department occur more frequently than desired. These three areas of the hospitals are environments with high risk patients, which can lead to errors. This is especially true in operating rooms, where anesthesiologists decide which drugs to use, prepare them, and administer them without assistance from other healthcare professionals, relying solely in our knowledge, experience, and the multiple monitoring of the vital functions of each patient. More often than desired, conditions become chaotic and stressful. The combination of these factors creates a fertile ground for errors that must be identified and addressed promptly to prevent catastrophic outcomes.[5]

A Canadian study found that 85% of anesthesiologists made a mistake or "quasi error," with only four reported deaths.[6] Despite the underreporting of unexpected incidents, it is estimated that errors in anesthesiology have increased due to factors as diverse as lack of knowledge, incompetence, non-compliance with recommended guidelines, inadequate communication in the perioperative period, lack of equipment and medicines, with errors in the administration of drugs being the most frequent.[7,8] Langlieb et al.[9] estimated the cost of preventable medication faults in the surgical room in the US health system, adjusting the number to the total annual operations in the United States (N = 19,800,000), which could reach an additional $5.33 billion U.S. dollars. These authors grouped preventable errors into 13 categories: inappropriate use of antibiotics, prolonged hemodynamic changes, untreated postoperative pain, prolonged neuromuscular blockade, inadequate oxygenation, untreated new-onset intraoperative cardiac arrhythmias, medication documentation errors, syringe interchange, severe hypotension, possible bacterial contamination from expired medications, untreated bradycardia less than 40 bpm, and a miscellaneous category. The extraordinary advances in patient safety under anesthesia make it difficult to imagine that incorrect drug administration occurs more frequently than desired, causing serious harm, including death. Our practice includes the use of multiple drugs in each anesthetic procedure, which exposes us to a wide variety of errors, ranging from omission of administration, inadequate doses, incorrect medications, and inappropriate routes of administration during the various stages of an anesthetic procedure (preoperative medication, induction, maintenance, emergency and postoperative period). In a group of 311 errors during anesthesia, 52% were due to incorrect administration of drugs during anesthesia, 43% occurred during induction, and 60% occurred during maintenance.[10]

Furthermore, there are some deleterious perioperative events such as allergies, anaphylaxis, shock, drug resistance, malignant hyperthermia, prolonged pharmacological effects, Takotsubo cardiomyopathy, transient or permanent blindness just to mention a few incidents that can complicate the perioperative course without necessarily being the result of inadequate professional practice. The use of opioids during anesthesia and to treat postoperative pain has

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been common practice, although excessive postoperative prescription is a current concern because it has been found to facilitate addiction to these drugs. The trend toward decreasing opioid use is underway, and while it is not considered malpractice, it is prudent to use multimodal analgesic regimens.

As anesthesiologists it is difficult to accept our mistakes, especially when the patient suffers severe damage or dies. When we finish our specialty, we are inexperienced young doctors with an enormous accumulation of knowledge, some more arrogant than others, but we all «*conquer the world in in a couple of days*». This initial stage of our specialized professional practice is just as dangerous as the pre-retirement phase, when we have already reached our professional goals and are tired of the daily routine of going to the hospital.[11-13] Like my mentors, I like to discuss this delicate topic with anesthesia residents, young colleagues and old anesthesiologists to emphasize the need to be better every day, to be even more alert and demanding of ourselves, not only every day of our professional practice,[14] but especially in these two critical stages. I tell them that no anesthesia is easy, that what is easy is to make mistakes.

Evolution after an incident or accident

When we make a mistake and realize that it could cause irreversible harm to our patient, our professional conduct may deteriorate due to the possibility of losing our job, facing a lawsuit, experiencing burnout, become depressed, and other serious situations. Physicians with a history of medical malpractice can be of high risk to the safety of their patients[15] and also their own security. After a serious event that generates a second victim syndrome or/and a medico-legal lawsuit, numerous actions can arise in the offending doctors:[16]

a) Denial of professional liability

b) Accept and meet the demand

c) Defensive medicine practices

d) Overcome the psychological, work, social and family outcomes generated by the second victim syndrome

e) Modify their practice

f) Move geographically for a new start

g) Stop practicing medicine

h) Switch to smaller practice scenarios

i) Suicide

There is not enough information about the future of these unfortunate colleagues, although some reports indicate that they often change or completely abandon their professional practice. The Second Victim Syndrome defined by Wu in 2020[17] is a phenomenon described as having a severe negative impact that requires multifaceted professional support; emotional, psychological, familiar, social, economic, and legal. It is experienced by approximately half of healthcare providers, and occurs when healthcare personnel, usually a doctor or a nurse experience negative physical, psychological, or emotional effects after an adverse event, such as an accident, patient-related injury or death. This situation can sometimes lead to suicide.[18-21] Suicide is rare among healthcare personnel; the age-adjusted suicide rate in 2022 was 14.21 per 100,000 individuals. In the USA, between 300 and 400 doctors commit suicide each year, being more frequent among female doctors between 250 and 400% more compared to women in other professions, with depression and drug addiction being the most important factors.[22-25] By specialty, anesthesiologists were second only to surgeons in suicide rates, according to data collected from 2012 to 2018. However, when adjusted for the number of active physicians in each specialty, anesthesiologists were twice as likely to commit suicide compared with other specialists. A factor that contributes to the higher suicide rate is their higher proportion of suicide attempts, which may be a result of greater knowledge of the lethality of drugs and easy access.[26]

How to prevent malpractice in anesthesiology

The possibility of making a mistake in anesthesiology is relatively low, but when a patient suffers the irreparable consequences of our errors, it represents a negative change in their life and environment, an irreparable and incurable loss for both the patient and their family.

Patient safety has always been the primary goal in our professional practice–fortunately-, there are many guidelines,[27-31] recommendations, protocols, new medications, modern anesthesia machines, and sophisticated monitoring equipment that bring us closer to achieving the goal of *Primum Non Nocere*. However, completely eliminating our mistakes is impossible, since making errors is a characteristic of the human beings. Thus, in every day of our professional practice we expose patients and the healthcare system to a catastrophe that can even end in the death of our patients, revocation of our license, ruin of our lives, and even suicide. The real goal is to minimize the frequency and magnitude of the possibility of making a mistake, and when this happens, we must diagnose the error and handle it correctly in all its possible aspects. The Anesthesia Patient Safety Foundation (APSF) and the World Federation of Societies of Anaesthesiologists are an excellent source of information on patient safety guidelines and how to reduce many of the human factors.[32,33]

The recommendations of the APPS are listed below:

a) Safety culture, teamwork and safety, inclusion and diversity, collegial communication and multidisciplinary collaboration, clinical staff safety, occupational health and well-being.

b) Clinical deterioration: prevention, detection, determination of pathogenesis, and mitigation of clinical deterioration in the perioperative period.

c) Anesthesia outside the operating room: safety in non-operating room settings, such as endoscopy suites, cardiac catheterization labs, emergency departments, and interventional radiology.

d) Perioperative brain health: perioperative delirium, cognitive dysfunction, and brain health.

e) Opioid-related harm: prevention and mitigation of opioid-related harm in surgical patients.

f) Medication safety: effects of medications, labeling issues, shortages, technological problems, and processes for preventing and detecting errors.

g) Infectious diseases: Emerging infectious diseases (including, but not limited to, COVID-19), including patient management, guideline development, equipment modification, and operative risk assessment.

h) Airway management challenges, skills, and equipment.

At the beginning of this century, anesthesia caused or contributed to death in only 1 in 79,500 procedures, and was the definitive cause in only 1 in 220,000. Currently, the frequency of anesthesia errors remains at 1 in every 130-150 procedures. As anesthesiologists, we have an obligation to ensure that operating rooms are safe, well-

equipped and to always keep in mind the guidelines for safe practice. These factors combined with continuous professional update and sufficient experience, will allow us to reduce our errors. As physicians, we live with death in our daily practice, but the families and friends of our patients do not. As anesthesiologists, we must remember that they, the patients, are not ours; they are much more than just an easy or complicated case, and it is our obligation to ensure that our anesthesiological practice is of the highest quality.

To conclude this editorial, I must mention that it is time for all anesthesia professionals to manage our safety with the same passion with we defend the safety of the patients. It is essential to emphasize that the constant pursuit of excellence is the main key to reducing errors in anesthesiology and related sciences. While excellence in professional practice does not guarantee the absence of errors, it is associated with a decrease in our failures, preventing episodes of malpractice and their serious consequences.

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