THE INCREASED INCIDENCE OF PSYCHOLOGICAL EFFECTS FOLLOWING EVENTS OF AWARENESS UNDER ANESTHESIA IN ADULT PATIENTS

ABSTRACT

For all the patients undergoing a surgical procedure, each step seems to be very daunting. Provided that it is the first time to be under the table, the patients are bound to feel a variety of feelings with respect to their procedure as well as the different protocols that are followed within the span of the operating room and beyond. As anyone might know, anesthesia is a critical component of modern medicine. It is because of this component of pre-operative assessment that allows for the painless surgical procedures and improved patient comfort to be carried out easily. It is the duty of an anesthesiologist to be vigilant at all times during the anesthesia to ensure a smooth and effective procedure throughout the duration of the procedure. However, there are instances when patients experience awareness under anesthesia, which refers to regaining consciousness and sensory perception during surgery while remaining paralyzed and unable to communicate their distress. This rare but distressing phenomenon has been associated with various psychological effects that can have lasting impacts on the affected patients. Awareness under anesthesia occurs when patients regain consciousness or partial consciousness during surgery, being able to hear or feel the surgical procedure, but they are unable to move, speak, or indicate their distress to the medical team. This review will explore the increased incidence of psychological effects following events of awareness under anesthesia in adult patients. It will view it from a descriptive perspective at how differently things are seen to be carried out when a

patient gains awareness during anesthesia, and also the later ‘effects’ of these awareness events on the patient’s psychological health.

Keywords: anesthesia, surgical procedures, awareness under anesthesia, psychological impact, elderly patients.

INTRODUCTION

The whole topic of anesthesia under impact is of great interest for the entire medical fraternity equally. Therefore, to understand about the impact of gaining awareness under anesthesia, it is important to study the topic in great detail.

Awareness under anesthesia, also called ‘intraoperative awareness’ is a dissociative phenomenon that occurs when a patient regains consciousness during surgery and retains explicit, postoperative recollection of events that transpired under anesthesia. (1)

Patient experiences of this phenomenon can vary from isolated auditory recall to the nightmarish ordeal of experiencing painful surgical stimuli while simultaneously grappling with sensations of suffocation and paralysis induced by neuromuscular blockade (NMB). (2)

Despite the broad spectrum of contexts where reduced consciousness is expected, it is the issue of Anesthetic Awareness with Recall (AAGA) that has garnered significant attention from both patients and healthcare practitioners.(3)

There have been various estimates of the incidence of AAGA. Most commonly, these are characterized within a wide range, with reported occurrences varying from 1 in 1,000 to 1 in 20,000 anesthesia administrations.(4) This variations can be attributed to a wide array of influential factors, including the specific anesthetic technique employed, the demographics of the patient population, and the nature of the surgical context and procedure. It is also important to

acknowledge that the published rates of incidence are profoundly influenced by the methodological approaches taken to investigate this phenomenon.

The predominant investigative approaches that are used for determining the rates of incidence of anesthesia under awareness are divided into two categories: directed postoperative questioning and self-reported awareness.(5)

Directed postoperative questioning involves active, targeted inquiries made to patients by healthcare providers or researchers after surgery. The rationale behind this method is to elicit direct responses from patients regarding their experiences of intraoperative awareness. Intriguingly, this approach consistently yields higher rates of reported AAGA compared to the self-reported awareness studies. Such results can be attributed to the nature of direct questioning, which may prompt patients to recollect otherwise forgotten experiences.(6)

Self-reported awareness studies, conversely, rely on patients voluntarily disclosing their experiences without being prompted by direct questioning. The lower rates of incidence in these studies may arise from several factors, including a potential hesitancy on the part of patients to report traumatic experiences, an inherent vulnerability in patient memory recall, or the effects of postoperative amnesia produced by certain anesthetic agents.(7)

Similarly, the timing of patient recall and the nature of their experiences play a crucial role in understanding the psychological impact of this phenomenon. While some individuals may not immediately recall events shortly after surgery, their memories may resurface with clarity one to two weeks later. It is essential, therefore, to employ formal postoperative interviews as the primary means of assessing intraoperative awareness. Such interviews provide a valuable platform for patients to recount their experiences, allowing healthcare providers to gain insights into the patient's perspective.(8)

A notable observation is that many patients who have experienced intraoperative awareness describe their recollections as vague auditory experiences or dreams. Surprisingly, a significant proportion of these patients do not find these experiences overly distressing. However, the content of these dreams can vary widely, and, in some instances, they may be deeply disturbing to the individual. (9)

In a study involving five hundred patients who received anesthesia with nitrous oxide, Utting revealed that 7 - 8% of patients considered these dream-like recollections as the most distressing aspect of their experience, while only 2% found other intraoperative events to be similarly disturbing.(10)

In more extreme cases, patients may even endure severe pain as part of their awareness experience. A comprehensive study involving approximately 12,000 patients who underwent general anesthesia uncovered awareness in 0.18% of cases where neuromuscular blockade was administered and 0.1% of cases where muscle paralysis was not imposed. Alarmingly, 40% of these patients reported a perception of pain, ranging from mild discomfort, such as throat soreness, to excruciating pain at the site of the surgical incision.(11)

Although many instances of intraoperative awareness are relatively inconsequential, some patients endure lasting and undesirable outcomes, including post-traumatic stress disorder and depression. These late-onset symptoms can encompass nightmares, flashbacks, and anxiety, and they have been reported in up to 30% of cases involving awareness. (11)

The psychological impact of intraoperative awareness is, therefore, a matter of profound concern, emphasizing the necessity of further research and interventions to mitigate the potential long-term consequences for affected individuals.

RISKS AND INCIDENCES OF PSYCHOLOGICAL INTRA-OPERATIVE AWARENESS EVENTS

Understanding the factors that predispose patients to intraoperative awareness is vital for both anesthesiologists and patients alike.

There are various descriptive studies and case reports have shed light on various patient characteristics that may be associated with the occurrence of intraoperative awareness. These characteristics encompass age, sex, ASA physical status, and drug resistance or tolerance.(12)

Patients who are at a heightened risk for experiencing intraoperative awareness often share drug abuse profiles. These patients are particularly those with a history of substance use or abuse, particularly opioids, benzodiazepines, and cocaine. (13)

Intraoperative awareness is often marked by the excruciating experience of pain during surgery. However, the distressing features of awareness extend beyond pain, encompassing an array of complaints.

Patients who have undergone this ordeal report being able to hear conversations during the surgical procedure, feelings of overwhelming anxiety, a profound sense of helplessness, paralysis, and even sensations of impending death. Such experiences can be profoundly traumatizing.

While some patients experience temporary after-effects, including sleep disturbances, nightmares, and daytime anxiety, which tend to subside over time, a smaller subset confronts the persistent specter of post-traumatic stress disorder (PTSD). (14)

This enduring condition manifests as repetitive nightmares, irritability, and persistent anxiety. The factors that determine why only some individuals develop PTSD following intraoperative awareness remain somewhat elusive. Suspected contributors include the patient's personality, a

preexisting predisposition to mental illness, or the emotional response to the surgical experience and the disease itself.(15)

The consequences of intraoperative awareness extend well beyond the individual patient, with potential medicolegal implications.

A study conducted by Domino et al. delved into the analysis of claims from the ASA Closed Claims Project. Interestingly, their findings revealed that intraoperative awareness accounted for up to 2% of all claims, signifying a notable proportion of medicolegal concerns within the field of anesthesia. (16)

What makes this statistic particularly striking is its resemblance to the rates of claims arising from life-threatening complications such as myocardial infarction and aspiration pneumonia. Interestingly, the incidence of these claims exhibited variances, with a higher frequency reported among female patients and in cases where the nitrous oxide-opioid relaxant technique was employed. This underscores the far-reaching implications of intraoperative awareness, not only for patients but also for healthcare practitioners and the legal landscape.(17)

There has been considerable research investigating the interplay between anxiety, age, and the occurrence of awareness. Several studies have illuminated a complex relationship among these variables. In one such study, it was notably emphasized that Awareness with Recall (ADA) tends to be more frequent in patients under the age of 60. This finding was corroborated by another study in which three patients experiencing ADA fell within the less-than-60-years age group, consistent with the existing literature.(18)

Furthermore, the diverse age groups have exhibited varying levels of anxiety in numerous studies. For instance, it was found in one study that preoperative anxiety levels were notably higher in younger individuals, suggesting a potential age-anxiety association.

An investigation indicated that elderly patients often held a more fatalistic perspective regarding healthcare experiences. Younger patients, who tend to be more attuned to healthcare events through the extensive use of mass media tools, frequently exhibited elevated anxiety levels. Nonetheless, it is worth noting that a few patients under the age of 30 displayed elevated anxiety scores. This variance can be attributed to the heightened aesthetic concerns of this specific age group, which seemed to overshadow their concerns related to anesthesia and surgery.(19)

The presence of prior painful experiences also wields influence over the level of fear and anxiety that individuals experience. This observation can be attributed to the social and individual differences in how individuals perceive and experience pain.

Gender plays a distinct role in determining anxiety levels related to anesthesia experiences. Research has consistently indicated that anxiety levels are generally lower in males compared to females. Additionally, higher anxiety scores are often found among patients undergoing anesthesia. (20)

Preoperative anxiety levels have been found to correlate with the American Society of Anesthesiologists (ASA) physical status classification score in the literature. Notably, low ASA scores tend to be associated with reduced anxiety, while higher scores are typically linked with heightened anxiety. The ASA score thus serves as an important predictor of preoperative anxiety.

DREAMS DURING ANESTHESIA

Furthermore, the occurrence of dreams during anesthesia, while intriguing, is a phenomenon that has been described with certain recurring characteristics. These dreams typically resemble those experienced during normal sleep, often brief and pleasant in nature, often containing content from everyday life.(21)

In the existing literature, the incidence of dreaming during anesthesia exhibits a wide range, influenced by various factors. These factors include age, gender, the specific anesthesia technique employed, the administration of drugs, the depth of anesthesia, and the timing of postoperative interviews.

The reported incidences span a spectrum from as low as 1% to as high as 80%. Notably, a study conducted by Uting et al. explored this phenomenon, revealing that 7% of 500 patients reported unpleasant dream experiences during anesthesia, with 2% retaining a recollection of these experiences.(22)

In another study, a subset of patients (8%) reported having experienced dreams during previous surgical operations. Interestingly, the dreams described by these patients did not exhibit negative or unpleasant features. This finding suggests that the nature and content of dreams experienced during anesthesia can vary considerably and underscores the need for continued research to elucidate the factors contributing to this phenomenon and its potential impact on patients.(23)

CONCLUSION

Awareness under anesthesia is a rare but distressing event that can have profound and lasting psychological effects on adult patients. As the medical community continues to improve monitoring and psychological support for affected individuals, it is essential to raise awareness about this issue to ensure that patients are well-informed and that steps are taken to minimize the risk of awareness under anesthesia. Additionally, continued research in this area is crucial to better understand and address the psychological impact of this phenomenon.

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