

*Research Article***Incidence of Awareness in Patients Underwent Emergency Laparotomy****Amany K. Abou El-Hussien, Amr N. Abd El-Razik and Marina A. Fawzy Boules**

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Abstract

Introduction: Unintended accidental awareness during general anesthesia represents failure of successful anesthesia, and so has been the subject of numerous studies during the past decades. **Aim of the work:** The aim of our study is to assess the incidence of awareness and recall of surgical events in emergency laparotomy in Minia university hospital under general anesthesia from 1st February 2018 to 31st July 2018. **Patients and Methods:** This descriptive cross sectional study was conducted in Minia University hospital emergency department during the period from 1st February 2018 to 31st July 2018 after obtaining approval from the ethical committee and written consent from the patients. **Results:** About 154 patients were admitted to emergency department for emergency laparotomy within period from 1st February 2018 to 31st July 2018, according to exclusion criteria, 51 patients were ruled out.

Keywords: awareness, general anesthesia, emergency laprotomy.**Introduction**

Unintended accidental awareness during general anesthesia (AAGA) represents failure of successful anesthesia, and so has been the subject of numerous studies during the past decades. As return to consciousness is both difficult to describe and identify, the reported incidence rates vary widely. The most common consequences appear to be nightmares, flashbacks and anxiety, sleep disturbances; fear of future anesthetics; late psychological symptoms, impaired daily relationships and job performance; and the tendency to avoid necessary medical care (Tasbihgou et. al., 2018).

Awareness during anesthesia with intraoperative memory occurs when the patient is able to process information and produce specific responses to several stimuli. The different phases of intraoperative awareness or memory are independent. Explicit or declarative memory is when the patient remembers facts, events or experiences that occurred during general anesthesia. Regarding implicit or procedural memory, defined as the memory of motor and sensorial capacities and abilities, the patient is unable to verbally express his experience during anesthesia, but there are changes in his postoperative behavior, habits and performance in such a way that psychological tests are required to detect the implicit memory. Another intraoperative

awareness phase is the state of wakefulness, when the patient is able to react to stimuli during surgery, but does not recall the experienced reactions (Nunes et al., 2012).

Aim of the work

The aim of our study is to assess the incidence of awareness and recall of surgical events in emergency laparotomy in Minia university hospital under general anesthesia from 1st February 2018 to 31st July 2018.

Patients and Methods

This descriptive cross sectional study was conducted in Minia University hospital emergency department during the period from 1st February 2018 to 31st July 2018 after obtaining approval from the ethical committee and written consent from the patients.

Exclusion criteria: Mental or psychic illness, age less than 12 years, unconscious patients, extubated more than 24 hours after operation, hypersensitive to electrodes used, hemodynamically unstable, because this affect cerebral autoregulation, and patient's conscious level.

All patients underwent emergency laparotomy, after extubation were interviewed twice by modified Brice questionnaire, twice, one within 24 hours after extubation and the other time 3 days later.

Results

Table (1) shows the demographic data of studied population.

Table (1): Demographic characteristics of studied population

		Descriptive statistics N=103
Age (years)	Range	(12-82)
	Mean ± SD	41.5±17.3
Sex (%)	Male	70(68%)
	Female	33(32%)
ASA (%)	1	68 (66%)
	2	25 (24.3%)
	3	7 (6.8%)
	4	3 (2.9%)
Age groups (%) (years)	Less than 18	5 (4.9%)
	18 - 39	50 (48.5%)
	40 - 59	30 (29.1%)
	60 or more	18 (17.5%)

Table 2 shows postoperative events: time of extubation and answers on the questionnaire

Table (2): Postoperative events.

		Descriptive statistics N=103
Time of extubation	Immediate postoperative	101(98.1%)
	2h postoperative	1(1%)
	4h postoperative	1(1%)
Last thing remembered before sleep	Operating room	103(100%)
First thing remembered on waking up	Operating room	9(8.7%)
	Transported to internal ward or ICU	11(10.7%)
	ICU	30(29.1%)
	Internal ward	53(51.5%)
Anything remembered between sleeping & awakening	No	103(100%)
	Yes	0(0%)
Dreaming during anesthesia	No	102(99%)
	Yes	1(1%)
Worst thing about operation	Nothing	103(100%)

Table 3 show the results of questionnaire according to the answers of the questionnaire, reporting no awareness, only one patient

mentioned dreaming intraoperative, giving incidence of 0.09% of awareness.

Table (3): Results of the questionnaire.

		Descriptive statistics N=103
Result	Unaware	102(99.1%)
	Dreaming	1(0.09%)
	Aware	0(0%)
	Possibly aware	0(0%)

Discussion

A lot of studies were done worldwide to detect incidence of awareness. Higher incidence of awareness (more than our results) showed in the following studies mostly due to larger sample sizes taken in patients with different operations and different anesthesia techniques at period of at least one year, this study evaluate our hospital's emergency anesthesia throughout six months.

Sebel et al., 2004 in multi center US study of sample size 19,575 patients underwent various elective and emergency operations also found that incidence of awareness 0.13% using interview postoperative.

Xu et al., 2009, conducted a research study in 25 different hospitals in China, in various operations with different anesthesia techniques, The results were 0.41% of 11,185 patients using interview postoperative.

Morimoto et al., 2011, a survey study was done in Japan answered by anaesthesiologists had attended various operations, showed a result of 0.028%, the determination of awareness depends on the anesthesiologists' experience of daily postoperative care, no interview with the patients.

Pandit et al., 2014, UK large project (NAP5) showed incidence of 1:19,600%, 91% of them were female, they depended on reports from patients by survey done for a year, then they are asked by Brice modified interview questionnaire.

Singla and Mangla et al., 2017 in Indian study, found incidence of awareness was 0.33% in 896 patients scheduled for different elective surgeries (ASA 4 excluded), patients interviewed with Brice questionnaire once 1 hour after arrival of PACU.

Conclusion

From our study we concluded that, our hospital's routine general anesthesia technique

used in emergency operations is cautious enough to prevent explicit intraoperative awareness.

Recommendations

We recommend to perform further studies to assess awareness in different operations, emergency, elective or both, awareness with use of different anesthesia techniques, awareness in children, implicit awareness, incidence of awareness in many health care centers in same country or in different countries in Egypt. Studies with larger sample sizes are important to be conducted

References

1. Morimoto Y, Nogami Y, Harada K, et al., Awareness during anesthesia: the results of a questionnaire survey in Japan. *J Anesth.* 2011; 25(1):72-7. 2.
2. Nunes RR, Porto VC, Miranda VT, et al., Risk Factor for Intraoperative Awareness, *Rev Bras Anesthesiol* 2012; 62(3): 365-374
3. Pandit JJ, Andrade J, Bogod DG, et al., 5th National Audit Project (NAP5) on accidental awareness during general anaesthesia: summary of main findings and risk factors. *British Journal of Anaesthesia.* 2014; 113(4):549-59.4.
4. Sebel PS, Bowdle TA, Ghoneim MM, et al., The incidence of awareness during anesthesia: a multicenter United States study. *Anesthesia and analgesia.* 2004; 99 (3):833-9.5.
5. Singla D, Mangla M. Incidence of Awareness with Recall under General Anesthesia in Rural India: An Observational Study. *Anesthesia, essays and researches.* 2017;11(2):489-94.6.
6. Tasbihgou SR, Vogels MF, Absalom AR. Accidental awareness during general anaesthesia – a narrative review. *Anaesthesia.* 2018; 73(1):112-22.7.
7. Xu L, Wu AS, Yue Y. The incidence of intra-operative awareness during general anesthesia in China: a multi-center observational study. *Acta anaesthesiologica Scandinavica.*2009;53(7):873-82.