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Advances in the Research of Nursing Care for Agitation during the Recovery Period from General Anesthesia

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Abstract: Emergence agitation (EA) during the recovery period from general anesthesia is a common adverse reaction that poses a serious threat to postoperative safety and recovery quality. This article systematically reviews the clinical manifestations, pathogenesis, advances in nursing interventions, and key nursing points for special populations of EA, aiming to provide evidence-based reference for clinical EA nursing practice.

Keywords: General anesthesia; Emergence agitation; Nursing intervention

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1. Clinical manifestations of EA

During the recovery period, patients under general anesthesia may experience a special state called "anesthesia awakening syndrome" (EA). This state is characterized by the patient gradually regaining consciousness, but their behavior is significantly different from that of the conscious state, presenting a state of mental disorder. Liu Shen, Zhang Weiying, Wang Xue, et al. pointed out that patients may exhibit a series of abnormal behaviors and psychological reactions, such as anxiety, panic, confusion, hallucinations, delusions, and even aggressive behavior [1]. Although these symptoms are usually short-lived, generally lasting from a few minutes to a few hours, some serious adverse clinical events are very likely to occur during this period.

2. Mechanism of EA occurrence

The specific pathogenesis of EA has not been fully elucidated yet. Current research suggests that its occurrence is the result of multiple factors working together. Liu Shen, Zhang Weiying, Wang Xue and others have pointed out that neurobiological research shows that the imbalance of regulation of various neurotransmitter systems in the central nervous system by general anesthetic drugs (such as γ-aminobutyric acid, N-methyl-D-aspartic acid, dopamine, 5-hydroxytryptamine, etc.) may be one of the core mechanisms

of EA [1]. Hu Yue, Chen Lin, Li Xiaoyu and others have specifically reviewed the mechanism of agitation during the awakening period of children, and proposed that the recovery speed of the inhibitory and excitatory effects of different anesthetic drugs on the central nervous system is inconsistent, which may lead to asynchronous functional recovery in different areas of the brain, thereby producing a state of separation between consciousness and behavior, and ultimately inducing agitation [2].

3. Nursing measures for agitation during the emergence of general anesthesia

3.1. Preoperative nursing intervention

The core objective of preoperative nursing intervention is to reduce patients' preoperative anxiety level, improve patients' psychological preparation for anesthesia and surgery, and reduce the inducing factors of EA from the source. Lv Fengzi, Jiang Ruxin, and Zhi Hui showed that preoperative psychological interviews and health education can significantly improve the awakening quality of general anesthesia patients and reduce the incidence of EA [3]. Jiang Xiujuan, Wang Yu, and Yang Fanglan also confirmed that preoperative experiential nursing combined with anesthesia awakening nursing can effectively reduce the risk of agitation during the awakening period of general anesthesia patients, and the effect is particularly obvious for patients with high preoperative anxiety scores [4].

3.2. Intraoperative nursing intervention

The focus of intraoperative nursing intervention is to optimize anesthesia coordination, reduce adverse stimuli and maintain the patient's physiological stability, and reduce the inducing factors of postoperative agitation during the recovery period. Warm-keeping nursing is an important measure for preventing EA during surgery. Low body temperature during surgery and recovery can increase the probability of stress response and shivering in patients, thereby inducing or aggravating EA. Li Ling's research shows that warm-keeping nursing during anesthesia recovery can effectively reduce the patient's stress response level and reduce the occurrence of agitation during the recovery period [5]. Huang Xiaomin's research shows that systematic anesthesia resuscitation intervention combined with comprehensive warm-keeping intervention also shows good results in reducing the incidence of EA [6].

Goal-oriented nursing is an intraoperative nursing model that has emerged in recent years. Lin Lili et al. have confirmed that goal-oriented nursing combined with auricular acupuncture can effectively improve the quality of awakening of patients under general anesthesia and reduce the incidence of EA [7]. This model can effectively reduce unnecessary adverse stimuli and improve the accuracy of nursing by setting nursing goals around the quality of patient awakening.

3.3. Postoperative nursing intervention

Postoperative care is a key aspect of EA prevention and control, and it runs through the entire management of the anesthesia recovery room. Pain management is the core of postoperative EA prevention and control, and effective postoperative analgesia is the core measure for preventing EA. Liu Mengqiu emphasized the importance of postoperative pain management for EA prevention and control in her comprehensive nursing intervention study [8].

Environmental and stimulus management is also an important part of postoperative care. Reducing various adverse stimuli during the recovery period is crucial for preventing EA. Cao Yun and Cheng Xuelin

pointed out that nursing staff should keep the anesthesia recovery room quiet and the light soft, avoid unnecessary noise and strong light stimulation, and avoid causing additional psychological stimulation to patients [9]. Wang Hui et al. proposed that applying the integrated medical and nursing model to the management of agitation during the recovery period of thoracic surgery patients under general anesthesia can reduce the incidence of agitation and adverse events caused by agitation, shorten the time of endotracheal intubation removal, and shorten the time of orientation recovery [10].

Strict observation and monitoring of the patient's condition is the prerequisite for early identification of EA. Timely detection of early signs of EA and intervention measures can prevent adverse events. Dong Hui and Duan Hong proposed that strengthening the nursing management of the anesthesia recovery room and implementing a hierarchical observation system are effective nursing measures to prevent and reduce the occurrence of EA [11].

4. Nursing care for agitation during the recovery period from general anesthesia in special populations

4.1. Pediatric patients

Children are the most common group of EA patients, and their pathogenesis and clinical manifestations are different from those of adults. Zhao Qingyu, An Rugang, Tan Zhengquan pointed out that the incidence of EA in children is much higher than that in adult patients, and EA attacks can increase the risk of self-harm in children and increase the burden of nursing work, so they need to be given special attention [12].

Su Xiaoli and Zhang Juanning pointed out that family members accompanying the child to the room for intervention, and on this basis, implementing cartoon video-assisted education and other methods to reduce the child's fear of surgery, can help the child wake up after surgery, reduce the degree of agitation and the risk of postoperative behavioral abnormalities, which is worthy of clinical promotion [13].

Huang Min and Su Yingchun proposed that implementing the concept of medical clowns combined with childlike nursing on the basis of basic nursing can effectively reduce the agitation scores of children under general anesthesia at different time points during the recovery period, shorten the recovery and extubation time, reduce the duration of crying, and improve the satisfaction of family members [14].

Wang Jinxiu, Hou Xiaowei, Yang Fuming et al. conducted experiments on two groups of children [15]. The control group was cared for and nursed by nurses in the post-anesthesia care unit (PACU) throughout the process. The observation group received family accompaniment on the basis of the control group. The results showed that providing emotional support such as parental accompaniment can help children get through the anesthesia recovery period smoothly and quietly, and improve their sense of security.

4.2. Elderly patients

Elderly people are another high-risk group for EA. Elderly patients have a higher risk of developing EA due to factors such as degenerative changes in the central nervous system, multiple underlying diseases, and decreased drug metabolism. Furthermore, the clinical manifestations of EA are often confused with postoperative delirium and other cognitive impairments, which can easily lead to missed or misdiagnosis.

Yuan Peipei and Feng Rui found that implementing detailed nursing care combined with multi-modal warming strategies during the perioperative period of elderly patients under general anesthesia can effectively improve the patient's body temperature, hemodynamics and other indicators, improve the quality

of postoperative recovery, and reduce agitation during the recovery period [16].

The research conducted by Zeng Zijun, Dong Dongwei and Ding Guanfu strongly confirms that targeted pre-control nursing combined with music intervention has a better effect. Patients can regain consciousness more quickly, and patients and their families show higher recognition and satisfaction with the nursing services provided by the nursing staff [17].

5. Conclusion

In conclusion, acute exacerbation (EA) is a significant clinical problem during the recovery period from general anesthesia, and its harm should not be underestimated. Nursing staff play an irreplaceable and crucial role in the prevention, identification, and management of EA.

Through systematic and comprehensive preoperative assessment and intervention, nursing staff can understand the patient's physical condition, disease characteristics, and potential risk factors in advance, thereby developing targeted and personalized nursing plans and laying a solid foundation for preventing EA (extraoperative angina). During surgery, nursing staff must adhere to meticulous management principles, closely monitoring the surgical progress and changes in the patient's vital signs. Postoperatively, rigorous monitoring is crucial. Nursing staff must constantly monitor the patient's awakening status, fluctuations in vital signs, and any signs of complications to promptly identify and address any issues. This significantly improves the quality of postoperative recovery, helping patients recover faster and better.

Disclosure statement

The author declares no conflict of interest.

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