

# Clinical Evaluation and Nursing Analysis of Airway Complications in Patients after General Anesthesia

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**Abstract :** To explore the clinical evaluation and nursing measures of airway complications in patients after general anesthesia. Methods: 126 patients undergoing general anesthesia in our hospital from August 2019 to August 2021 were selected as the research data, and 63 cases were randomly divided into groups. The control group received routine nursing intervention and the observation group received comprehensive nursing intervention. The incidence of airway complications in the two groups during anesthesia recovery was observed and the psychological status of the two groups was evaluated. Results: the airway complication rate in the observation group was 4.76%, significantly lower than that in the control group (17.46%,  $P < 0.05$ ). After operation, the scores of SAS and SDS in the observation group were significantly lower than those in the control group ( $P < 0.05$ ). Conclusion: comprehensive nursing intervention for patients undergoing general anesthesia can effectively prevent airway complications in the recovery period of anesthesia and adjust the psychological state of patients, which has high nursing value.

**Keywords :** General Anesthesia; Anesthesia Recovery Period; Airway Complications; Nursing Measures; Mentality

General anesthesia is a common surgical anesthesia scheme, which means that anesthetics enter the body through respiratory tract inhalation or intravenous and intramuscular injection to temporarily inhibit the central nervous system and promote patients' loss of consciousness, general pain loss, amnesia, reflex inhibition and skeletal muscle relaxation, so as to ensure the smooth completion of the operation. The recovery period of anesthesia is when the drug is metabolized or discharged from the body, patient's mind, feeling and various reflexes gradually recover. Although with the progress of medical technology, the relatively safe scheme of general anesthesia is selected according to the characteristics of patients and the type of operation, there are still many patients with airway complications after anesthesia, such as respiratory obstruction, insufficient ventilation, hypoxemia, respiratory amnesia, etc., we should pay attention to the implementation of safe and reliable nursing services to ensure effective prevention and timely treatment of complications, promote the good recovery of patients after operation and ensure the operation effect. Therefore, this study discussed the clinical evaluation and nursing measures of airway complications in patients after general anesthesia, as follows.

## 1. Data and methods

### 1.1 General information

126 patients undergoing general anesthesia in our hospital from August 2019 to August 2021 were selected as the research data. 63 cases were randomly divided into groups by lot, all of which were classified as grade I-II of American Association of Anesthesiologists (ASA). Patients voluntarily signed informed consent and obtained the approval of the hospital ethics committee. In the control group, there were 36 males and 27 females, aged from 24 to 75 years, with an average age of  $(48.15 \pm 3.77)$  years. The types of operations were 38 elective operations and 25 emergency operations; There were 34 males and 29 females in the observation group, aged from 25 to 75 years, with an average age of  $(48.22 \pm 3.71)$  years. The types of operations were 40 elective operations

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and 23 emergency operations; Patients with hypertension, diabetes, heart, lung, liver and kidney dysfunction, psychiatric symptoms and related medication history were excluded. There was no statistical significance between the two groups ( $P > 0.05$ ).

## 1.2 Nursing methods

(1) Respiratory care: ① Patients with respiratory obstruction, smoking, children, obesity and short and thick neck anatomy, poor muscle tone caused by residual anesthetic drugs, local swelling, edema or allergy caused by operation, excessive secretion stimulation and other factors. During the recovery period of anesthesia, especially after pulling out the endotracheal tube, patients are prone to complications such as tongue falling back, laryngeal spasm, airway edema and aspiration. During the recovery of anesthesia, high-risk groups should consider extubation after the recovery of airway reflex, remove respiratory secretions in time, operate carefully and avoid violence. In case of obstruction, the patient's head is tilted back and his jaw is lifted. If the obstruction cannot be relieved, the airway shall be correctly placed through the nose or mouth, the mask shall be pressurized for oxygen, endotracheal intubation shall be performed when necessary, and drug treatment shall be given according to the doctor's advice. ② Insufficient ventilation, improper wound dressing of head, face, neck, chest and abdomen surgery, residual effects of narcotic drugs, pain, excessive secretion and bronchospasm stimulation lead to central respiratory depression, incomplete recovery of expiratory muscle function and postoperative low lung volume syndrome. In the process of anesthesia recovery, we should strengthen postoperative analgesia, remove respiratory secretions in time, encourage and help patients with deep breathing and cough. Those with pressure bandage can reduce pressure appropriately, conduct blood gas analysis, and those with mechanical ventilation can maintain the complete recovery of respiratory function. If necessary, give antagonism and follow the doctor's advice. ③ Hypoxemia is caused by low inhaled oxygen concentration, hypoventilation, atelectasis, pulmonary edema, excessive secretion, bronchospasm and so on. During the recovery of anesthesia, oxygen is given by mask to maintain oxygenation, respiratory secretions are removed in time, patients are encouraged to breathe deeply and cough, and blood gas analysis is carried out. If oxygen inhalation fails to improve and  $Paco_2$  increases, respiratory support and mechanical ventilation with ventilator should be carried out. If it persists, it should be transferred to ICU for further treatment. We should control the infusion speed, follow the doctor's advice, and reduce the after load and laryngeal spasm.

(2) Pain nursing pain can increase muscle tension, in order to reduce the total compliance of respiratory system, vital capacity, tidal volume, functional residual volume, and the alveolar ventilation / blood flow ratio. Due to the influence of pain, patients dare not breathe deeply and cough hard, so that ventilation is limited, which is easy to lead to complications such as pneumonia and atelectasis. According to the pain degree and physical condition of patients, multi-mode analgesia can be adopted. PCA pain treatment technology can be adopted. Through postoperative visit, the analgesic effect can be reflected, and the analgesic effect can be evaluated and improved, so as to achieve the best effect, maximize the comfort of patients, and improve nursing quality and patient satisfaction.

(3) Sedation nursing sedated patients are prone to respiratory depression, manifested as hypoxemia and hypercapnia, and apnea in severe cases. Therefore, in the recovery stage of anesthesia, patients should be given oxygen to keep the respiratory tract unobstructed. If necessary, antagonistic drugs and mechanical ventilation should be used to reduce the degree of sedation so as not to aggravate respiratory depression.

(4) Temperature nursing respiratory rhythm slows down and deepens with the decrease of body temperature, hypothermia breathing weakens or even stops, and hypothermia compensatory ventilation per minute increases, which can lead to respiratory alkalosis. The prevention of postoperative hypothermia is more important than treatment. Active heat preservation is of great significance to maintain normal body temperature and reduce the occurrence of related complications caused by abnormal body temperature. The room temperature is controlled at  $24\text{ }^{\circ}\text{C} - 26\text{ }^{\circ}\text{C}$  and the relative humidity is  $50\% - 60\%$ . Warm cotton quilt is used to cover the patient's skin to prevent heat loss due to conduction or radiation. If necessary, we should use the air heater and infusion fluid with blood transfusion and infusion heater to keep warm, and observe the patient's vital signs and skin conditions. In case of shivering, inhale oxygen, we should use drugs according to the doctor's advice, and take temperature detection in time.

(5) We should preventive nursing, strengthen the monitoring of recovery room, and closely monitor the patient's ECG, pulse, respiration, blood oxygen saturation and blood pressure, so as to record the recovery of blood oxygen saturation concentration, respiratory depth and frequency, evaluate the state of consciousness, skin and mucous membrane color, limb blood circulation and muscle tension, and evaluate whether there is respiratory amnesia. If it occurs, we should immediately stimulate the patient's respiration and limb movement. In case of any abnormality, we should handle it in time to ensure that the facilities and equipment are in good condition, conduct regular pulmonary function evaluation, and set up fences to prevent falling into bed; We should

analyze the patient's nerve reflex, pupil, pulse, respiration, blood pressure, etc., to estimate the depth of anesthesia, especially the patients with delayed awakening need to clarify the causes in time and deal with them in time according to the doctor's advice; Most of the patients with discomfort and pain in the mouth and throat after extubation can recover on their own psychological comfort, patient communication with them, and establish a sense of trust between nurses and patients.

### 1.3 Observation indicators

The occurrence of airway complications during anesthesia recovery in the two groups was observed, including laryngeal edema, tongue falling back, respiratory forgetting, aspiration by mistake, accumulation of respiratory secretions, etc. The psychological states of the two groups were evaluated by self rating Anxiety Scale (SAS) and self rating Depression Scale (SDS).

### 1.4 Statistical treatment

SPSS22.0 was used for analysis. The measurement data were expressed by  $(x \pm s)$ , t-test, count data were expressed by (%), chi square test,  $P < 0.05$  was the comparison, and the difference was statistically significant.

## 2. Results

### 2.1 Comparison of airway complications between the two groups during anesthesia recovery

According to table 1, the airway complication rate in the observation group during anesthesia recovery was 4.76%, significantly lower than 17.46% in the control group ( $P < 0.05$ ).

Table 1. Comparison of airway complication rate during anesthesia recovery between the two groups (%)

Group	No.	Laryngeal edema	Retrolingual drop	Breath forgetting	Aspiration by mistake	Accumulation of respiratory secretions	Complication rate
Observation group	63	1(1.59)	0(0.00)	0(0.00)	1(1.59)	1(1.59)	3(4.76)
Control group	63	2(3.17)	1(1.59)	2(3.17)	3(4.76)	3(4.76)	11(17.46)
X <sup>2</sup>	—	—	—	—	—	—	5.142
P	—	—	—	—	—	—	0.023

### 2.2 Comparison of psychological status between the two groups

It can be seen from table 2 that there was no statistical significance between the two groups before operation,  $P > 0.05$ ; After operation, the scores of SAS and SDS in the observation group were significantly lower than those in the control group ( $P < 0.05$ ).

Table 2. Comparison of psychological state between the two groups (score,  $\bar{X} \pm S$ )

Group	No.	SAS		SDS	
		Before operation	After operation	Before operation	After operation
Observation group	63	49.77 ± 4.84	40.02 ± 4.06	52.24 ± 5.06	42.24 ± 4.71
Control group	63	49.82 ± 4.79	47.45 ± 4.52	52.15 ± 5.18	49.83 ± 5.03
X <sup>2</sup>	—	0.058	9.706	0.098	8.742
P	—	0.953	0.000	0.921	0.000

## 3. Discussion

General anesthesia is widely used in clinical operations. Because different patients and different operations have different requirements for anesthesia methods and anesthetic dosage, some patients may be affected by drugs, emotions, surgery and other factors, resulting in airway complications during anesthesia recovery. Comprehensive nursing intervention advocates comprehensively evaluating the actual needs of patients, carrying out professional, efficient and humanized nursing services, and ensuring the best nursing quality. Postoperative oxygen inhalation was given to maintain the unobstructed respiratory tract, pay attention to monitoring the patient's vital signs, and assist the patient in taking an appropriate body position, in order to give safe and reasonable sedative and analgesic drugs according to the doctor's advice, and give appropriate analgesic and sedative intervention to prevent pain and agitation in the awakening period. During nursing, close monitoring and careful nursing were carried out according to the anatomical, physiological and psychological characteristics of patients, so as to strengthen safety prevention, prevent complications and promote good postoperative recovery. The results of this study showed that the airway complication rate of the observation group in the recovery period of anesthesia was 4.76% and the scores of SAS and SDS were significantly lower than those of the control group. It was confirmed that comprehensive nursing intervention can effectively reduce airway complications in the recovery period of

anesthesia, help patients eliminate anxiety and depression, facilitate postoperative recovery, and have high nursing value. It is similar to the results of Chen Zifei that “the incidence of agitation, hypothermia and shivering in the recovery period of anesthesia in the intervention group is lower than that in the control group”, which proves that paying attention to professional nursing in the recovery period of anesthesia can prevent complications. In conclusion, the application of comprehensive nursing intervention after general anesthesia can effectively reduce airway complications in the recovery period of anesthesia and dredge patients’ negative emotions, which is worthy of promotion.

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