

Anesthesiology Teaching Rounds and Case Discussions, and Discussion of Implementation Strategies during the Residency Training

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Abstract: The standardized training of residents provides talent support for the transformation of perioperative medicine in anesthesiology, and the main way of training is theoretical guidance, covering three types: case discussion, teaching ward rounds, and small topic explanation. During the standardized training of resident doctors, teachers are required to have a rich theoretical foundation and clinical experience, and the case discussion and teaching rounds should be based on real cases, which are similar in form, which is easy to be confused during the teaching period and affect the overall teaching effect. Due to the particularity of anesthesiology, it is necessary to clarify the teaching purpose and select the appropriate teaching method during the teaching period, and according to the analysis of the actual needs of the residents during the standardized training period, the implementation strategies and differentiated effects of anesthesiology teaching rounds and case discussions in the process of residential training are summarized as follows.

1. Introduction

During the residency training period in the hospital, it is necessary to ensure the independent decision-making ability and personal self-learning ability of the residents after the training, so that they can solve medical problems in a timely manner in the future. In particular, the standardized training and guidance of anesthesiology residents, the clinical practice ability of interns is extremely important, once the anesthesiologist's personal ability is insufficient, it will not only affect the life and health safety of patients, but also lead to a decline in the credibility of the hospital. At this stage, with the continuous progress of medical technology in China, it is required to pay attention to the quality characteristics, basic abilities and knowledge structure of new medical talents during the training period, so as to further promote the leapfrog growth of medical students to physicians. According to statistics, most of the professional knowledge of clinicians in China is acquired in post-graduation medical education, and more attention is paid to the on-the-job training of medical students at this stage, so that residents can improve their clinical skills and enrich their theoretical

knowledge while having high learning efficiency [1]. Therefore, improving the quality of teaching during the residency period will affect the future development of resident doctors. In recent years, anesthesiology has gradually changed to perioperative medicine, paying more attention to the inculcation of theoretical knowledge in teaching, case discussion teaching methods and teaching rounds are widely used in theoretical teaching, and there are some commonalities in the form of differences between the two. In order to improve this situation, this article reviews the differences between the two and the effects in implementation, which are as follows.

2. The significance of the theory of resident training for anesthesiologists

At this stage, under the changes of people's clinical needs, the field of medical teaching attaches more importance to the planning and education of talents, and conducts in-depth analysis of what form of medical talent training is adopted, and achieves corresponding results. However, with the cross-level progress of higher education in China and the progress of the internationalization of medical education, the relevant standards of medical education have been gradually put forward internationally, thus changing the mode of medical and health services and the medical model in recent years. However, the current stage of medical education in China cannot meet the needs of social development, and there is a great obstacle to the training of medical talents. In the current stage of medical education in China, most of the newly graduated medical students are directly invested in the society, so that their own abilities cannot meet the clinical requirements, resulting in the serious impact on the career of medical students, and even irresponsible to the society and patients. Once medical students go directly to work without systematic clinical training, it will lead to a serious imbalance in the level of treatment and diagnosis in the hospital, most of the doctors with higher qualifications in the hospital have a high level of diagnosis and treatment ability, while the diagnosis and treatment level of doctors in primary medical institutions is poor, which makes the problem of "expensive to see a doctor" and "difficult to see a doctor" in China. In general, clinical anesthesiologists have strong operational ability, but the level of medical theory is average. Anesthesiology is clinically comprehensive, and clinical anesthesiologists are required to have a high level of operational ability and a deep theoretical foundation, which requires a variety of forms of theoretical teaching during the residency training period, and gradually improve the professional ability of anesthesiologists with different depths and different contents.

3. The teaching form of anesthesiology

During the residency period, the theoretical teaching methods include case discussions, teaching rounds and small lectures. Mini-lectures refer to the problems that exist in the practice of the residents raised by the instructor, and the teaching content includes practical experience, evidence-based evidence, and clinical knowledge, etc., and interacts during the lecture, which is a form of intensive learning, so as to improve the thinking ability and disease diagnosis ability of anesthesiology residents [2]. Case discussion and teaching rounds refer to the use of practical cases to elaborate theoretical knowledge, which are similar in form and can easily be confused during clinical teaching. Due to the particularity of anesthesiology, it lacks a three-level medical ward round system, and most of the medical workers are scattered, unable to communicate with patients in a timely manner, and cannot formulate a ward round system in accordance with surgical or internal medicine standards.

3.1 Teaching rounds

Teaching rounds refer to the interaction between teachers and students under the organization of

clinicians to learn real clinical cases, and guide residents to actively collect patients' medical history, signs and clinical information during the teaching period, understand the way of disease diagnosis, standardize clinical thinking, and cultivate medical humanistic qualities. During the teaching rounds, they should be informed before completing the rounds in the classroom, and do a good job of collecting information at the bedside, covering doctor-patient communication, physical examination, and medical information. After the information collection is completed, it is necessary to summarize the data in the classroom, analyze the outcome data step by step, and discuss and propose targeted treatment plans. Compared with ordinary ward rounds, teaching ward rounds allow residents to learn more theoretical knowledge and apply it to clinical practice. The purpose of general medical rounds is to cure the disease, analyze the patient's condition, and formulate an effective treatment plan according to the actual situation. Therefore, during the residency period, the teaching rounds can ensure that the residents actively participate in clinical practice, ensure the geometry of theoretical knowledge and practical operation, ensure the dialectical thinking of the residents, and improve their problem-solving ability.

Most anesthesiology residents have a worse clinical mindset than other clinicians, especially in disease differentiation and diagnosis. Perioperative medicine requires anesthesiologists to be able to cope with various changes in the condition during surgery, especially to provide timely diagnosis and treatment when the patient's vital state is abnormal. For example, intraoperative hypotension is a common sign in the perioperative period, and appropriate hypotension can ensure a clear surgical field of view and reduce intraoperative occurrence, thereby shortening the operative duration [3]. Therefore, once the patient has hypotension during the operation, it is necessary to clarify the cause in time, observe whether the influencing factors are peripheral factors or central factors, and give symptomatic treatment according to the actual influencing factors. This requires anesthesiology residents to have a wealth of clinical thinking and theoretical knowledge, and they need to select typical case analysis during teaching rounds. However, the traditional ward rounds are not suitable for anesthesiology, and the clinical practice can be based on the standards of surgical and internal medicine teaching rounds, and formulate teaching rounds that meet their own teaching needs according to the actual situation of anesthesiology, so as to improve the clinical thinking ability of anesthesiology residents.

3.2 Case discussion

The teaching materials of case discussion are all real clinical cases, and the case teaching method should be adopted to carry out corresponding teaching activities during the teaching period. When selecting cases, it is necessary to focus on patients with true records, clear signs and clear medical history, and in-depth analysis should be carried out if there are doubts in etiological observation, clinical manifestations, disease differentiation and diagnosis. Teachers need to review the materials before teaching, create appropriate teaching plans, and discuss in an interactive way between teachers and students, so as to cultivate the clinical thinking and learning initiative of residents.

At the same time, there are significant differences between case discussions and clinical difficult case discussions. The discussion of difficult clinical cases is applicable to complex diseases, rare diseases, and rare diseases, and the results of auxiliary examinations, the observation of physical signs, and the changes in symptoms are atypical, which makes it difficult to participate in the entire diagnosis and treatment period, and requires the participation of experts from multiple disciplines [4]. As a result, such cases cannot be used in teaching.

3.3 Differences and commonalities between case discussions and teaching rounds

After continuous research, it can be seen that the case discussion and teaching rounds are based

on actual cases, and the teaching mode focuses on discussion and ward rounds respectively, but it is easy to be confused during clinical application. In the United States, the teaching rounds are called morning reports, which need to be presided over by the chief resident, and the participants are 2/3 year residents, select newly admitted patients as cases, gradually narrow the scope of diagnosis according to past medical history, family history and current medical history, follow up for physical examination, and obtain corresponding information in the physical examination based on the current medical history. Through detailed and standardized analysis process research, the final diagnosis results and targeted treatment plan are revealed. During the teaching rounds, the resident should avoid jumping thinking, and the moderator should control the rhythm and direction, while maintaining a clear line of thought. Case discussion is called case report in the United States, which is mostly carried out in the evening or noon, focusing on rare cases and typical cases that have been successfully diagnosed and treated, and the medical history is reported by the physician in charge, and the teaching points of case explanation are proposed. Before the case discussion is taught, the appropriate literature should be reviewed to understand the clinical pathway and the latest progress of the disease. It is important to note that relevant experts and attending physicians should be actively involved during the case discussion to facilitate timely consultation and expert opinions [5].

It can be seen that the discussion of cases is mainly based on patients in the process of seeking medical treatment, and although such cases have undergone routine treatment, there are still some unexpected situations, and it is necessary to continuously consult the data and consult relevant experts for cause analysis and experience summary. The cases of teaching rounds are mainly patients who have just been admitted to the hospital, and the corresponding information is summarized under the guidance of senior physicians, and medical history records and diagnosis and treatment plans are made for patients, so as to cultivate the clinical thinking ability of residents.

4. Case discussion and teaching ward rounds implementation experience

4.1 Case studies discuss implementation

Case discussion Clinical application Multi-select postoperative cases, this study selected the case of "1 case of anesthesia for patients undergoing right upper lobectomy after right lower lobectomy", the specific condition is that the patient was diagnosed with lung cancer 2 years ago, and the right lower lobectomy was clinically given, and the lesion of the right upper lobe was observed in the follow-up, and the right upper lobectomy was required for him this time. Before the operation, the patient's lung function should be checked, and the forced expiratory volume of one second after surgery should be calculated, and the patient's surgical tolerance should be evaluated. In order to study the causes of serious complications, it was proposed that the chest CT images of patients showed that the right upper lobe of the right lung was compensated for enlargement after right lower lobectomy, accounting for more than normal people. After the resection of the right upper lobe, the remaining lobes of the patient could not compensate for the poor prognosis. Therefore, the ppoFEV1% formula should not be used to assess whether serious pulmonary complications will occur preoperatively, and isotope lung perfusion scans should be performed for the patient [6]. If such a patient appears in our hospital, the attending physician in charge of anesthesia is asked to preside over the discussion during the case discussion, and the resident physician will report the results of the patient's examinations, physical examinations, and medical history. Anesthesiology residents were used as teaching objects, and several experts were invited to participate. During the discussion, the moderator pauses during the presentation of key messages and asks questions such as: Can the patient tolerate the surgery after the pulmonary function report is approved? Do I need to add additional tests to the patient before surgery? What are the additional inspection items? Until the resident completes the answer to the question, the answer will be revealed, and the specific

results will be analyzed, during which time the specialist will ask questions about leave.

4.2 Implementation of teaching rounds

In the Department of Anesthesiology, the medical scope includes pain, intensive care medicine, and clinical anesthesia. The teaching rounds of pain medicine and intensive care medicine are based on the Guidelines for Standardized Training and Teaching Activities for Residents [7]. At this stage, the guidelines for the teaching round mode of clinical anesthesia are not clear, therefore, this paper proposes the following contents according to the practical experience of such ward rounds: the theme should be determined 7 days before the teaching round, taking the thoracoscopic surgery of patients with chronic obstructive pulmonary disease as an example, and the host teacher should select the appropriate patient 1 day before the operation, and guide the resident physician to make the ward round slide after seeking the consent of the patient and his family. In the early morning of the ward round, the instructor needs to propose the main body and teaching purpose of the ward round, and the resident can briefly report the anesthesia plan and pathological history. During the physical examination, the patient is admitted to the operating room in advance, given special care, and the resident doctor conducts a preoperative assessment for the patient again, asks and observes the patient's clinical signs and symptoms of systemic diseases, supplements the medical history data, checks whether the patient has a bucket chest, and auscultates whether there is wheezing for him, and the host physician can correct and supplement it on the side. After returning to the classroom, the resident continues to report the patient's examination results, and then the host instructor asks the resident questions in an interactive manner, covering what to expect during the operation, what to do, anesthesia planning, and so on [8]. During this time, the host faculty member will review the patient's electronic medical record and demonstrate to the resident how to evaluate the patient's tolerance to surgery through a pulmonary function report; How to select the appropriate double-lumen tube model for bronchial diameter measurement by thoracic CT. At the end of the round, the resident physician should complete all the questions and answer them, and the host physician should make a brief summary.

5. Conclusion

In summary, a large number of talents are needed during the transition from anesthesiology to perioperative medicine, and residential training can provide important talent support for the development and progress of the discipline. Teaching rounds and pathological discussions are based on real cases, so as to guide the residents to propose the best medical plan during the diagnosis and treatment, which has a good teaching effect in clinical practice, fully improves the theoretical learning ability of the resident physicians, standardizes their clinical thinking, and cultivates the resident talents needed for the development of the discipline.

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